Supplementary Table 4: 50 orthopaedic cases and response by GPT-4.

	Case Description	Further examination	Diagnosis	Treatment
1	The patient is a 39-year-old female	Based on the patient's symptoms and	Considering the patient's clinical	The initial treatment for cervical
	who presented with radiating pain in	physical examination findings, she	presentation and physical evaluation	radiculopathy is usually conservative in
	the left upper limb accompanied by	should undergo cervical spine imaging.	results, her primary diagnosis is likely	nature. This includes a combination of
	numbness in the fingers six months	Specifically, a magnetic resonance	cervical radiculopathy. This condition	rest, physical therapy exercises aimed at
	ago. The recovery assessment	imaging (MRI) scan should be	is typically caused by nerve root	strengthening the neck and improving
	revealed tenderness in the left neck	conducted given its superior soft tissue	compression in the neck, which may	flexibility, non-steroidal anti-
	and shoulder area, positive tests for	contrast resolution which is particularly	result from factors such as cervical	inflammatory drugs (NSAIDs) for pain
	brachial plexus traction and	helpful in diagnosing conditions such	disc herniation, degenerative disc	relief, and possibly corticosteroid
	intervertebral foramen compression	as disc degeneration, herniation, and	disease, or spinal stenosis. The	injections to reduce inflammation around
	on the left side. Additionally, there	nerve root compression. This could	patient's symptoms of radiating pain,	the nerve root. However, if these measures
	was reduced skin sensation on the	help reveal any abnormalities in the	numbness in the left upper limb, and	fail to alleviate symptoms or the condition
	radial aspect of the left upper limb,	intervertebral discs, vertebral bodies,	decreased grip strength are indicative	worsens over time, surgical intervention
	decreased grip strength, and	spinal cord, or nerve roots.	of this diagnosis.	may be necessary. This could involve
	decreased muscle tone.			procedures such as an anterior cervical
				discectomy and fusion (ACDF), cervical
				disc arthroplasty, or a posterior cervical
				laminoforaminotomy, depending on the
				specifics of the patient's condition.
2	Patient, female, 45 years old,	Based on the patient's symptoms and	The primary diagnosis for this patient	Treatment of delayed union or nonunion
	presented with an open fracture of	previous X-ray results, she should	appears to be delayed union or	depends on various factors including the
	the lower one-third of the left tibia	undergo further imaging to assess the	possibly nonunion of the left tibia and	cause, location, and extent of nonunion.
	and fibula. The wound was managed	healing status of her fractures. A	fibula fractures. This is suggested by	The main goal of treatment is to stimulate
	through surgical debridement	computed tomography (CT) scan could	persistent pain at the fracture site,	bone growth and stabilize the fracture site.
	followed by wound closure and	be ordered for a more detailed	minimal callus formation and visible	Non-surgical interventions such as pulsed

	immobilization with a cast. After	assessment of bone detail and	fracture lines three months post-	ultrasound therapy or bone growth
	three months, the patient still	alignment, especially as it is often a	injury.	stimulation may be considered initially.
	reported localized tenderness, and	more accurate tool in evaluating		However, if these treatments fail or if the
	X-ray examination revealed	nonunion or delayed union of fractures.		nonunion is assessed to be due to
	persistent fracture lines with	Additionally, a bone scan could be		infection, mechanical instability or other
	minimal callus formation. Fracture	considered to evaluate the metabolic		factors, surgical intervention may be
	alignment remained satisfactory.	activity at the fracture site which can		necessary. This might involve bone
		give insight into the healing process.		grafting, internal fixation with plates,
				screws or intramedullary nails, or external
				fixation devices. In some cases, if there's
				an infection present, debridement of the
				infected bone and tissue would be
				necessary before bone reconstruction.
3	A 4-year-old child presented with a	Considering the age of the child, the	The primary diagnosis for this patient	In terms of treatment, transient synovitis
	history of frequent night crying for	symptoms, and the normal X-ray	could possibly be transient synovitis	typically resolves spontaneously with rest
	the past two weeks, complaining of	results, it would be advisable to	or "irritable hip." This is a common	and symptomatic treatment, such as pain
	pain in the left knee joint and	perform a magnetic resonance imaging	cause of hip pain and limping in	relief with NSAIDs like ibuprofen. For
	reluctance to move the left leg or	(MRI) scan of the left hip. The MRI is	children between the ages of 3 and 10.	more serious conditions like Legg-Calvé-
	engage in walking and standing	preferred in this case because it	The child's reluctance to bear weight	Perthes disease or septic arthritis,
	activities. The child had previously	provides excellent contrast resolution	on the affected leg and lack of	treatment can range from physical therapy
	visited a local hospital for	and multiplanar imaging capabilities,	significant findings on X-ray are	and bracing to surgical intervention,
	examination, including X-ray	making it suitable for evaluating soft-	typical of this condition. However,	depending on severity of the condition.
	imaging, which did not reveal any	tissue abnormalities, bone marrow	other diagnoses, such as Legg-Calvé-	Regardless, any child with persistent pain
	significant abnormalities in the left	pathology, or joint disorders.	Perthes disease (a childhood hip	and refusal to bear weight requires prompt
	knee.		disorder caused by a disruption of	evaluation and management to prevent
			blood flow to the ball part of the hip	long-term complications.

			joint) or septic arthritis should also be	
			considered.	
4	A 60-year-old female patient	Given the ongoing pain, numbness, and	The primary diagnosis in this case	Initial management would include
	presented with severe osteoarthritis	weakness in the limb post-surgery,	seems to be postoperative neuropathy,	medication for pain control, such as
	of the right knee, characterized by	further imaging studies could be	possibly due to peroneal nerve injury	NSAIDs or opioids if necessary. Physical
	flexion contracture of 30° and varus	beneficial. An MRI of the right leg may	or another peripheral nerve injury.	therapy could also benefit the patient by
	deformity of 25°. The patient	be useful to evaluate for potential nerve	These types of injuries can occur	improving strength, flexibility, and
	underwent total knee arthroplasty	damage or compression which could be	during total knee arthroplasty due to	function of the affected limb. If the patient
	and postoperatively received	causing the patient's symptoms.	factors such as direct surgical trauma,	does not improve or if severe nerve injury
	analgesia through a patient-	Additionally, X-ray of the right knee	nerve stretch, ischemia, or	is identified on imaging, consultation with
	controlled analgesia pump.	could help assess the prosthesis and its	compression from postoperative	a neurologist or neurosurgeon may be
	However, the patient continues to	alignment.	swelling or hematoma.	warranted for further evaluation and
	experience pain, numbness, and			management. This could involve measures
	weakness in the dorsum of the			ranging from conservative observation,
	affected limb.			with or without adjuvant therapies like
				physical therapy and analgesics, to
				surgical intervention in more severe cases.
5	A 28-year-old male patient	Given the patient's symptoms and	The primary diagnosis for this patient	The main goals of treatment for
	presented with a history of lower	physical exam findings, further	appears to be ankylosing spondylitis.	ankylosing spondylitis are to reduce
	back and hip pain for one year, with	imaging of the sacroiliac joints should	This is a type of inflammatory	symptoms, maintain spinal flexibility, and
	stiffness upon waking in the	be pursued using Magnetic Resonance	arthritis that predominantly affects the	prevent complications. Non-steroidal anti-
	morning, and occasional redness and	Imaging (MRI). MRI is more sensitive	spine and sacroiliac joints. The	inflammatory drugs (NSAIDs) are
	pain in both eyes. Physical	than X-ray for detecting inflammation	patient's presenting symptoms of	typically used as first-line treatment to
	examination revealed tenderness at	or changes in the sacroiliac joints	chronic lower back pain, morning	alleviate pain and stiffness. Regular
	the sacroiliac joint. X-ray	which are often seen in conditions such	stiffness, tenderness at the sacroiliac	exercise and physical therapy are also
	examination did not reveal any	as ankylosing spondylitis. Besides, it	joint, and occasional redness and pain	critical to help maintain posture and

	abnormalities, but the erythrocyte	can also show early inflammatory	in the eyes (uveitis), together with	flexibility. In cases where the disease is
	sedimentation rate (ESR) was	changes before they become evident on	elevated erythrocyte sedimentation	more advanced or does not respond to
	elevated at 28 mm/h.	X-rays.	rate, all support this diagnosis.	NSAIDs, disease-modifying antirheumatic
				drugs (DMARDs) or biologics might be
				necessary. Furthermore, the episodes of
				uveitis should be managed promptly in
				consultation with an ophthalmologist.
6	A 6-year-old male patient	The recommended imaging test for the	Based on the provided information, a	The treatment plan will depend upon the
	accidentally noticed a firm	child would be an ultrasound, which is	possible diagnosis might be a benign	type of tumor identified. In many cases, if
	protrusion on the inner aspect of the	non-invasive and doesn't expose the	soft tissue tumor, such as a lipoma or	the tumor is benign and isn't causing any
	lower end of the right thigh while	child to radiation. Ultrasound would	a fibroma. These are common in	symptoms, it can be closely monitored
	bathing. The patient did not	provide information about the size,	children and are usually painless. The	without immediate treatment. However, if
	experience any pain, and knee joint	shape, location, and characteristics	fact that the protrusion is firm,	the tumor is causing discomfort, or if the
	movement was normal.	(solid vs liquid) of the protrusion. If	however, could suggest a more	diagnosis is uncertain, surgical removal
		further detail is needed - such as	fibrous tumor such as a fibroma or	may be necessary. If the tumor is found to
		evaluation of bone involvement or	possibly a more serious condition	be malignant, then a comprehensive
		detailed soft-tissue characterization, an	such as a sarcoma.	treatment plan involving surgery,
		MRI could also be considered.		chemotherapy and/or radiation therapy
				may be required depending on the specific
				type and stage of the cancer.
7	A 21-year-old male patient	Given the findings from the clinical	The primary diagnosis for this patient	Treatment of osteosarcoma generally
	presented with a one-month history	presentation and X-ray, a further	appears to be osteosarcoma. This type	involves multimodal therapy combining
	of pain in the lower end of the	imaging study, such as a magnetic	of aggressive bone cancer is common	surgery and chemotherapy. The mainstay
	femur, accompanied by localized	resonance imaging (MRI) scan, should	in teenagers and young adults and	of treatment is surgical removal of the
	swelling on the inner aspect for one	be performed. MRI can provide	often affects the long bones in the	tumor, which may involve limb-salvaging
	week. The affected area showed	detailed information about the structure	body, such as the femur. The	surgery or, in more advanced cases,

	significant tenderness upon	of the femur, including the bone	symptoms described by the patient	amputation. Adjuvant chemotherapy is
	palpation, but the patient did not	marrow, and surrounding soft tissues. It	along with the X-ray findings of	typically administered before and after
	experience fever or pain during	can help determine the extent of	cortical destruction are indicative of	surgery to shrink the tumor and eliminate
	activity. X-ray examination revealed	cortical destruction, potential	osteosarcoma.	any remaining cancer cells. The specific
	cortical destruction on the medial	involvement of surrounding tissues and		treatment plan will depend on the location
	condyle.	any hidden lesions.		and stage of the cancer, the patient's
				overall health, and other factors.
8	An 8-year-old boy experienced a	Based on the provided case	The main diagnosis that can be	In terms of treatment, this patient would
	minor external injury to the left	information, this 8-year-old boy should	inferred from the given symptoms is	likely need both medical and surgical
	thigh and, on the second day,	undergo radiographic examinations,	Acute Hematogenous Osteomyelitis	intervention. He should be started
	developed significant localized	specifically an X-ray of the left thigh.	(AHO). AHO is a type of bone	immediately on empiric antibiotic therapy,
	swelling, severe pain, reluctance to	This diagnostic test will help to	infection commonly seen in children,	typically intravenous, to cover common
	move, and high fever.	visualize the involved bones and	often caused by bacteria	organisms until culture results are
		surrounding tissues, potentially	(staphylococcus aureus being the most	available. Surgery could be needed to
		revealing any structural damage or	common), which are introduced into	drain any abscess and remove any necrotic
		changes associated with infection, such	the blood stream and reach the bone	tissue. After initial management, the
		as osteomyelitis. Moreover, if	leading to infection. The injury might	patient should be closely monitored and
		necessary, a Magnetic Resonance	have acted as a port of entry for the	might require physical therapy for
		Imaging (MRI) may be required for a	bacteria.	rehabilitation. It's also important to
		detailed visualization of the soft tissues		communicate with the family about the
		including muscles and blood vessels.		importance of adhering strictly to the
				prescribed antibiotics course and follow-
				up appointments to ensure complete
				recovery and prevent complications.
9	A 51-year-old female patient has	Given the patient's symptoms, we	From the symptoms presented, the	Treatment for Lumbar Spinal Stenosis
	been experiencing recurrent lower	should recommend her to have a	primary diagnosis is Lumbar Spinal	typically begins with conservative options,

	back and leg pain for over six	Magnetic Resonance Imaging (MRI)	Stenosis (LSS). This condition is a	including physical therapy, nonsteroidal
	months. She develops intermittent	scan of the lumbar spine. The MRI can	narrowing of the spinal canal in the	anti-inflammatory drugs (NSAIDs), and
	claudication in both legs while	provide detailed images of the spinal	lower back, which can compress the	epidural steroid injections. If these
	walking. The patient complains of	cord and surrounding structures,	nerves and cause symptoms such as	measures do not alleviate the symptoms,
	numbness and pain in the posterior	helping to identify any abnormalities	pain, numbness, and intermittent	surgical intervention may be considered,
	and lateral aspects of both calves	such as stenosis, herniation, or other	claudication. LSS can often occur as a	such as decompression surgery or spinal
	and feet, which is relieved after	spinal pathologies that might be	result of wear-and-tear changes in the	fusion. Her management plan should also
	squatting briefly but does not occur	causing her symptoms.	spine related to osteoarthritis.	include strict control of her diabetes to
	when lying down. There is a slight		Additionally, her diabetes might	prevent further nerve damage. It's
	decrease in sensation in the saddle		contribute to her symptoms due to	important to communicate to the patient
	area and the outer aspect of both		diabetic neuropathy, which can cause	that while these interventions will help
	legs. Both Achilles reflexes are		similar symptoms.	manage the symptoms, they won't cure the
	normal, and dorsalis pedis pulses are			condition entirely. Therefore, ongoing
	present. The patient also has a			management and regular follow-ups are
	history of diabetes mellitus for the			crucial.
	past 2 to 3 years.			
10	A 30-year-old female patient was	Given the history of cervical spine	Based on the physical examination	Immediate treatment should focus on
	admitted to the hospital three hours	injury and the symptoms described, this	findings, the main diagnosis for this	stabilizing the patient's neck to prevent
	after sustaining a cervical spine	patient should undergo immediate	patient suggests a complete Cervical	further injury. High-dose corticosteroids
	injury. Physical examination	imaging studies to assess the extent of	Spinal Cord Injury (SCI). The level of	could be considered within the first few
	revealed complete paralysis of all	the spinal cord damage. I would	the injury appears to be below the C4	hours after injury to reduce inflammation
	four limbs, with complete loss of	recommend an emergency Magnetic	vertebra, since there is normal	and swelling around the spinal cord.
	sensation, motor function, and	Resonance Imaging (MRI) scan of the	sensation in the acromial region	Surgical intervention may be necessary
	reflexes. However, sensation in the	cervical spine. MRI is the imaging	(innervated by C4), but complete loss	depending on the nature of the injury -
	acromial region was normal.	modality of choice for spinal cord	of motor function and sensation below	whether there are fractured or dislocated
		injuries as it allows visualization of the	that level.	vertebrae that need to be realigned and

		spinal cord and surrounding tissues,		stabilized. Once the acute phase has
		potentially revealing any edema,		passed, the patient will require long-term
		hemorrhage, or other signs of trauma.		rehabilitation, including physical and
		In addition, a computed tomography		occupational therapy, to manage her
		(CT) scan may be indicated if there is a		symptoms, improve functionality as much
		need to evaluate for bony fractures or		as possible, and provide training for
		dislocations.		activities of daily living given the
				anticipated permanent paralysis.
11	A 70-year-old female patient has	Given the information provided, and	Based on the long-term bilateral knee	Treatment for osteoarthritis typically
	been experiencing bilateral knee	considering the patient's age and	pain, physical and radiographic	includes conservative measures such as
	joint pain for over 10 years, with	radiographic findings, this patient	findings, the primary diagnosis for	pain management with over-the-counter
	worsening symptoms in the past	should be recommended to undergo a	this patient is Osteoarthritis (OA),	NSAIDs or prescribed medications,
	year, especially after walking long	Magnetic Resonance Imaging (MRI).	likely at a moderate to severe stage.	physical therapy focused on building
	distances. Physical examination	An MRI would provide detailed images	OA is a degenerative joint disease	strength and improving mobility, weight
	reveals medial deviation of both	of the soft tissue structures in the knee,	characterized by the breakdown of	loss if necessary, and the use of assistive
	knee joints, and the patellar glide	including cartilage, tendons, and	cartilage and the formation of	devices like canes or walkers for support.
	test is negative. X-ray imaging	ligaments that may not be visible on X-	osteophytes or bone spurs. The medial	In cases where these measures are
	shows narrowing of the medial joint	ray. This examination can give	deviation of the knees, narrowing of	ineffective in managing symptoms,
	space and the formation of marginal	additional insights into the extent of her	the joint space, and presence of	surgical procedures like joint replacement
	osteophytes.	condition and help in formulating a	marginal osteophytes are all indicative	surgery may be considered. In addition, it
		precise treatment plan.	of this condition.	would be beneficial to educate the patient
				about the importance of lifestyle
				modifications, such as limiting activities
				that exacerbate pain, and maintaining a
				healthy weight to reduce stress on the
				knee joints.

12	An 8-year-old male patient with a	Given the patient's history and current	Based on the provided information,	The treatment approach for malunion
	fracture of the midshaft of the left	condition, no further imaging studies	the main diagnosis for this patient is	depends on the severity of the deformity
	tibia and fibula for three months. X-	may be necessary at this time. As the	malunion of the fracture. Malunion is	and the patient's symptoms. If the child
	ray imaging reveals an oblique	fracture is already healed, additional	a complication of a fracture in which	does not have significant functional
	fracture of the midshaft of the tibia	imaging would not provide new	the bone heals in an incorrect position	disability, pain, or cosmetic concerns,
	and fibula, with 60% alignment of	information or change the management	or alignment. This can result in	conservative management with close
	the fracture ends, an anterior	plan.	functional impairment or cosmetic	monitoring might be appropriate.
	angulation of 8°, and 1cm overlap.		deformity. In this case, the oblique	However, if the malunion is causing
	The fracture has already healed.		fracture of the midshaft of the tibia	significant problems, surgical intervention
			and fibula has healed with a 60%	such as osteotomy (cutting and reshaping
			alignment, an anterior angulation of	of the bone) and internal fixation might be
			8°, and a 1cm overlap.	necessary to correct the deformity.
				It is also crucial to advise the child's
				parents about the potential risk of future
				complications due to the improper healing
				of the fracture. These risks include limb
				length discrepancy, altered mechanics of
				the affected limb, and potential early onset
				arthritis. Regular follow-ups will be
				needed to monitor the child's progress and
				manage any arising issues promptly.
13	A 22-year-old male patient	This patient should be evaluated with a	The diagnosis, based on the provided	In terms of treatment, the first action that
	sustained a crushing injury to the	hand x-ray for the remaining portion of	information, is traumatic amputation	needs to be taken is to thoroughly clean
	right little finger, and it has been	the amputated finger and the hand. The	of the right little finger along with	and dress the wound to avoid infection.
	three hours since the amputation	purpose of this imaging is to assess the	phalangeal fractures. The associated	The patient should be administered pain
	occurred. The right little finger is	extent of bone damage and		medication and tetanus prophylaxis as

	completely amputated at the	fragmentation, which can guide the	loss of soft tissue further complicates	necessary. After initial management, a
	midportion of the first phalanx,	surgical plan for possible reattachment	the issue.	hand surgeon should be consulted
	while the remaining finger bones are	or reconstruction.		immediately to evaluate the need for
	fragmented. There is also partial soft			microvascular surgery for reattachment of
	tissue loss.			the amputated digit. In some cases,
				reattachment may not be feasible or may
				lead to less functional outcome, especially
				when there's severe crush injury or
				extensive bone fragmentation. If
				reimplantation is not an option,
				reconstructive surgery using local flaps or
				grafts might be considered to cover the
				wound and maintain the length of the
				finger if possible.
14	A 19-year-old female patient	Given the patient's symptoms and X-	From the provided information, the	For treatment, if the lesion is indeed a
	presents with left proximal leg pain	ray findings, additional imaging studies	primary diagnosis is likely a benign	benign tumor like an ABC, options could
	for the past month without any	should be conducted for further	bone tumor, possibly an Aneurysmal	include observation with periodic
	apparent triggering factors. Physical	evaluation. Specifically, Magnetic	Bone Cyst (ABC) or Osteoid	imaging, sclerotherapy (injecting medicine
	examination reveals a local bulge	Resonance Imaging (MRI) of the	Osteoma, given her age and the	to shrink the cyst), or surgical curettage
	with slightly elevated skin	affected area may be advised. An MRI	radiographic finding of "worm-eaten-	(scraping out the lesion) with bone
	temperature and visible varicose	can provide a detailed image of the	like destruction". ABCs are blood-	grafting. The choice between these options
	veins on the surface. Knee joint	bone and surrounding tissues,	filled, expansile cystic lesions that can	would depend on factors such as the size
	mobility is unaffected. X-ray	potentially highlighting the extent of	cause pain, swelling, and potential	and exact location of the lesion, the
	examination indicates "worm-eaten-	bony destruction and its impact on the	pathological fractures.	patient's symptoms, and the effect of the
	like destruction" at the proximal end	surrounding structures.		lesion on the structural integrity of the
	of the tibia.			bone. However, a definitive diagnosis

				requires biopsy which also helps in ruling out other possibilities including malignancy. It's also important to manage the patient's symptomatic varicose veins with compression stockings and lifestyle
				modifications. Regular follow-ups are
				essential to monitor the condition and
				prevent any complications.
15	A 60-year-old male patient presents	Given the patient's age, symptoms and	Based on the provided information,	Osteoporotic vertebral fractures are
	with lower back pain for the past	X-ray findings, it would be appropriate	the primary diagnosis for this patient	commonly treated with pain management
	three weeks, without any history of	to recommend a Magnetic Resonance	may be a vertebral compression	and conservative measures like physical
	significant trauma. X-ray imaging	Imaging (MRI) scan of the lumbar	fracture, possibly secondary to	therapy and brace use. In severe cases,
	reveals destruction of the third	spine. The MRI can provide detailed	osteoporosis or metastatic cancer. The	minimally invasive surgical procedures
	lumbar vertebra, compression	images of the spinal cord, vertebrae	patient's age and the radiographic	like vertebroplasty or kyphoplasty may be
	wedge deformity, and normal	and surrounding structures, potentially	finding of vertebral destruction and	considered. However, if the vertebral
	intervertebral disc space.	revealing any abnormalities such as	compression wedge deformity without	destruction is due to a pathological
		tumors, infections, or other pathologies	disc space narrowing are suggestive	process like cancer, then treatment will
		that might be responsible for the	of this condition.	need to address the underlying condition,
		observed vertebral destruction and		potentially involving radiation therapy,
		deformity.		chemotherapy, or surgery. It should also
				be noted that further diagnostic work-up,
				such as a biopsy or blood tests, may be
				required to identify the exact cause of the
				vertebral destruction. Regular follow-ups
				will be needed to monitor the patient's

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				condition and manage treatment
				effectively.
16	A 46-year-old male patient, a long-	Considering the patient's symptoms, he	Based on the provided symptoms,	Treatment typically involves conservative
	distance bus driver, has been	should undergo an imaging	primarily the lower back pain	measures initially, including physical
	experiencing recurrent episodes of	examination to identify potential	radiating to the left heel, the main	therapy exercises targeting core muscle
	lower back pain for the past two	abnormalities. Specifically, a Magnetic	diagnosis for this patient is likely	strengthening, pain relief through non-
	years. Over the past three months,	Resonance Imaging (MRI) scan of the	Sciatica, possibly due to Lumbar Disc	steroidal anti-inflammatory drugs
	the pain has started radiating to the	lumbar spine would be recommended.	Herniation or Degenerative Disc	(NSAIDs), and lifestyle modifications
	left heel.	The MRI can provide detailed images	Disease. These conditions can lead to	such as weight loss if needed, proper
		of the spinal cord and surrounding	irritation or compression of the sciatic	posture, and avoiding sitting for prolonged
		structures, helping to detect any spinal	nerve, the longest nerve in the body	periods. If these measures are not effective
		pathologies that might be causing his	running from the lower back down to	in relieving the symptoms, then epidural
		symptoms.	the feet, causing symptoms like lower	steroid injections or surgical intervention
			back pain radiating down to the leg or	may be considered.
			heel.	In this patient's case, it would also be
				beneficial to discuss ergonomic
				modifications such as using a cushion for
				lower back support while driving or taking
				regular breaks to stretch. Regular follow-
				ups should be arranged to monitor the
				patient's progress and adapt treatment as
				necessary.
17	A 32-year-old male patient	Based on the clinical symptoms and	The primary diagnosis for this patient	As for the treatment strategy,
	presented to the hospital with left	history of the trauma, I would	appears to be a brachial plexus injury,	physiotherapy and rehabilitation exercises
	upper limb dysfunction for the past	recommend an MRI (Magnetic	specifically affecting the upper trunk	should be initiated first to maximize the

	four months, following a motorcycle	Resonance Imaging) scan of the	which includes the C5 and C6 nerve	function of the unaffected muscles and
	accident. Physical examination	cervical spine and brachial plexus. This	roots. This damage explains the	prevent joint stiffness. Pain management,
	reveals an inability to perform	imaging modality can provide detailed	paralysis of the clavicular portion of	if necessary, could include analgesics or
	shoulder abduction and elbow	images of soft tissues such as nerves	the pectoralis major muscle and the	non-steroidal anti-inflammatory drugs. If
	flexion. There is paralysis of the	and muscles, which may have been	inability to perform shoulder	the MRI reveals severe nerve damage or
	clavicular portion of the pectoralis	damaged in a motorcycle accident.	abduction and elbow flexion.	avulsion, a referral to a neurosurgeon
	major muscle, but the latissimus	Specifically, this test can help ascertain	However, since the patient has	might be needed for surgical exploration
	dorsi muscle strength is essentially	if there is any nerve root avulsion,	retained strength in the latissimus	and possible nerve repair or grafting. The
	normal. Movement below the elbow	nerve compression or other structural	dorsi muscle and can move his arm	success of such interventions depends on
	is possible.	abnormalities that could be causing the	below the elbow, it is likely that the	many factors including the extent and type
		patient's upper limb dysfunction.	lower trunk of the brachial plexus	of nerve injury. Regular follow-ups are
			(C8-T1) remains intact.	essential to monitor the progress of
				recovery and adjust the treatment plan
				accordingly.
18	A 35-year-old male patient has been	Given the patient's clinical	Based on the information provided,	Treatment plan would be primarily
	experiencing pain and swelling on	manifestation, progression of	the primary diagnosis appears to be	surgical, aiming at complete removal of
	the medial side of the right knee for	symptoms and radiographic findings, I	Giant Cell Tumor of Bone (GCTB).	the tumor to alleviate pain and prevent
	the past six months. X-ray imaging	would recommend a further diagnostic	This is suggested by the age of the	further enlargement or pathological
	conducted at an external clinic	imaging study using MRI (Magnetic	patient, site of the lesion, and	fracture. The specific type of surgery
	revealed a translucent area	Resonance Imaging). This will help to	radiographic findings including 'soap	depends on various factors such as the size
	measuring 5cm x 4cm at the	determine the extent of the lesion and	bubble' appearance and an expansive	and exact location of the tumor, and
	proximal medial aspect of the tibia,	any soft tissue involvement.	lytic bone lesion.	whether it has spread into nearby
	with a soap bubble-like shadow in	Furthermore, a biopsy might be		structures. Options may include curettage,
	the center and enlargement of the	required for histopathological		en bloc resection, or in advanced cases,
	e			
	bone end. Over the past month,	examination to confirm the diagnosis.		limb salvage surgery or amputation.
	bone end. Over the past month, swelling has significantly worsened,	examination to confirm the diagnosis.		limb salvage surgery or amputation.

	with severe nighttime pain and			Adjuvant therapy such as denosumab, a
	restricted range of motion in the			monoclonal antibody that inhibits RANKL
	right knee joint. Upon admission, X-			(a protein essential for the formation,
	ray imaging shows an increase in			function and survival of osteoclasts which
	the size of the lesion at the proximal			are involved in GCTB), can also be
	end of the tibia, disappearance of the			considered. This medication can help
	soap bubble-like shadow, and the			reduce tumor size prior to surgery and
	presence of a cloudy shadow			decrease the risk of recurrence.
	infiltrating into the soft tissues.			Postoperative physiotherapy will also be
				important to regain mobility and strength
				in the affected knee. Regular follow-ups
				are necessary to monitor for possible
				recurrence and manage any complications
				related to the treatment.
19	A 29-year-old male patient	Given the sudden onset of severe lower	Based on the information provided,	The treatment plan for this patient should
	experienced sudden and severe	back pain associated with a lifting	the primary diagnosis would likely be	initially involve conservative
	lower back pain while bending over	injury, I would recommend an MRI	an acute lumbar disc herniation. This	management. This includes bed rest in a
	to lift a bundle of books. The pain	(Magnetic Resonance Imaging) scan of	condition occurs when the inner	comfortable position to relieve pressure on
	was so intense that he was unable to	the lumbar spine. The MRI can provide	gelatinous material of an	the lumbar spine, over-the-counter pain
	move, and he required assistance	high-resolution images of the spinal	intervertebral disc protrudes through	relievers such as nonsteroidal anti-
	from others to return home and rest	structures and help to identify	the outer layer, potentially pressing on	inflammatory drugs (NSAIDs), and
	in bed. The pain persisted the	abnormalities such as herniated discs,	the surrounding nerves and causing	physical therapy once the acute pain
	following day.	nerve root compression, or signs of	severe pain.	subsides.
		ligament or muscle strain.		

20	A 67-year-old female patient	Given the patient's postoperative status	Based on the information provided,	The treatment plan should start with
	underwent left knee arthroplasty two	and recent pain, I would recommend an	the primary diagnosis could be	conservative management including rest,
	weeks ago and has been	X-ray of the left knee. This will help to	postoperative inflammation or early	ice application, elevation of the affected
	experiencing pain in the left knee	assess the position of the prosthesis and	prosthetic joint infection. Both	limb, and nonsteroidal anti-inflammatory
	for the past week. Physical	any potential abnormalities that might	conditions can cause swelling,	drugs (NSAIDs) to manage the pain and
	examination reveals a body	be causing pain such as loosening of	tenderness, and pain in the	inflammation.
	temperature of 36.7°C, a heart rate	the implant or local bone destruction.	surrounding tissues. However, the	If infection is suspected based on blood
	of 74 beats per minute, and blood	Additionally, I would also suggest	lack of systemic symptoms such as	tests or worsening clinical signs, then
	pressure of 128/80 mmHg. The left	obtaining blood tests, particularly	fever, the slightly elevated skin	antibiotics should be started immediately
	knee is locally swollen and tender,	inflammatory markers like C-reactive	temperature over the surgical site, and	after obtaining appropriate cultures, and
	with normal skin color. The skin	protein (CRP) and erythrocyte	the negative patellar glide test might	consultation with an infectious disease
	temperature is slightly higher than	sedimentation rate (ESR), to rule out a	give more weightage to postoperative	specialist should be considered. In certain
	the contralateral side. There is	possible postoperative infection. If	inflammation.	cases, surgical debridement or even
	localized tenderness on the outer	suspicion for infection remains high, a		revision arthroplasty might be necessary.
	aspect of the inferior pole of the	joint fluid analysis may be helpful.		Regardless of the cause of pain, regular
	patella, but the patellar glide test is			physiotherapy should be continued to
	negative. Range of motion of the			improve range of motion and strengthen
	knee is from 0° to 100° .			the muscles around the knee. Regular
				follow-ups are important to monitor for
				any signs of complications and to ensure
				proper healing and recovery.
21	A 43-year-old male patient has been	Based on the patient's clinical history	The patient's symptoms such as	Our primary treatment goal would be to
	experiencing lower back pain for the	and symptoms, I suggest he undergo a	chronic lower back pain and radiating	relieve pain, improve mobility and prevent
	past four years, accompanied by	Magnetic Resonance Imaging (MRI)	pain along the posterior aspect of the	or minimize future disability. Non-
	radiating pain in the left lower limb	scan of his lumbar spine. This imaging	thigh and outer edge of the foot seem	surgical treatments like medication,

	for the past five months. The pain	test will help us identify any potential	indicative of Lumbar Radiculopathy,	physical therapy, and epidural steroid
	radiates from the lumbar region	abnormalities or changes in the lumbar	most commonly caused by a herniated	injections could be the first step.
	along the buttocks, posterior aspect	vertebrae, intervertebral discs, nerves,	disc or spinal stenosis. The decreased	Medications such as nonsteroidal anti-
	of the thigh, and down to the outer	and nearby structures that might be	sensation of pain in the specified	inflammatory drugs (NSAIDs), muscle
	edge of the foot. Physical	contributing to his pain. It can also	regions further suggests nerve root	relaxants, and narcotics may help reduce
	examination reveals a decreased	show whether the nerve roots are	compression at the L5-S1 level of the	pain. Physical therapy exercises aim to
	sensation of pain on the posterior	compressed or have been damaged due	lumbar spine.	strengthen the core muscles supporting the
	and lateral aspects of the right lower	to herniated disc or spinal stenosis.		spine which can alleviate pressure on the
	leg, as well as the outer edge of the			nerve root causing the pain. Epidural
	foot.			steroid injections can help reduce
				inflammation around the nerve root. If
				non-surgical treatments fail to provide
				relief, surgical intervention like
				microdiscectomy or laminectomy might
				be considered, aiming to remove the
				portion of the disc or bone spur that is
				pressing on the nerve root.
22	A 55-year-old male patient was	Based on the patient's history and	From the given symptoms, such as	The appropriate treatment would depend
	admitted to the hospital two hours	clinical presentation, it is advisable to	pain, loss of active movement,	on the severity and type of the injury
	after experiencing right hip pain and	perform an X-ray examination of the	exacerbated pain during passive	confirmed by imaging studies. For
	functional impairment following a	right hip and pelvis to confirm any	movement, and protective muscle	example, if a hip dislocation is confirmed,
	car accident. The patient was struck	possible fractures or dislocations. X-	spasms, this patient likely suffers	an immediate closed reduction under
	from behind by a low-speed car	rays are typically the first choice for	from a right hip fracture or hip	sedation or general anesthesia should be
	while crossing the road, resulting in	imaging in cases of trauma as they can	dislocation. The fact that the limb	performed. This involves manipulating the
	pain in the right hip and limited	give a clear view of the bony	appears shortened and is held in	hip joint back into its normal position. It's
	movement of the affected limb.	structures. If needed, we may also	flexion, adduction, and internal	crucial to perform this as soon as possible

	There are no other discomforts	consider a Computed Tomography	rotation strongly suggests a posterior	to reduce the risk of complications, like
	reported and no numbness in the	(CT) scan which can provide detailed	hip dislocation.	avascular necrosis of the femoral head. If
	lower limbs. The patient has a	images and a better assessment of		a hip fracture is detected, surgical
	history of good health with no	complex fractures.		intervention might be necessary.
	previous trauma. Prior to the injury,			Depending on the location and extent of
	the affected limb had normal			the fracture, this could involve internal
	mobility, and there is no history of			fixation, partial hip replacement
	infectious diseases. Deep tenderness			(hemiarthroplasty), or total hip
	is present in the posterior aspect of			arthroplasty. Post-treatment rehabilitation
	the right hip. The affected limb			will play a significant role in regaining
	exhibits flexion, adduction, internal			mobility and strength.
	rotation, and shortening deformity.			
	Active movement of the hip joint is			
	lost, and passive movement			
	exacerbates the pain with protective			
	muscle spasms. Both knee joints			
	have normal motion, and sensory,			
	motor, and circulatory conditions in			
	the limb are intact.			
23	A 25-year-old male patient presents	Given the complex nature of this	The clinical picture provided indicates	Treatment will depend on definitive
	with lower back pain, fatigue, low-	patient's clinical presentation, I	potential Lumbar Spondylodiscitis, an	diagnosis. If lumbar spondylodiscitis,
	grade fever, night sweats, and	recommend an array of imaging tests to	infection of the intervertebral disc	antibiotic therapy, possibly combined with
	weight loss for over a month. The	identify the root cause. A Magnetic	space and adjacent vertebrae, which is	surgical intervention might be required. If
	symptoms have worsened over the	Resonance Imaging (MRI) scan of the	consistent with his back pain,	an intra-abdominal process is confirmed, it
	past three days, leading to hospital	lumbar spine can provide detailed	tenderness at L4-L5, and systemic	might need surgical attention. Regardless,
	admission. The patient previously	information about any abnormalities in	symptoms. His right lower abdominal	this patient needs to be kept under close

	sought medical attention at an	discs, vertebrae, or soft tissues that may	tenderness may be indicative of an	observation due to the severity and
	external clinic, where he was	be contributing to his lower back pain.	intra-abdominal process such as	complexity of his symptoms.
	diagnosed with "lumbar muscle	Given that he also presents with	appendicitis or possibly an abscess	
	strain" and prescribed oral pain	symptoms such as fatigue, fever, night	formation if there's an ongoing	
	medication and physical therapy,	sweats, and weight loss, these systemic	systemic infection.	
	which provided slight relief. Since	symptoms indicate a possible		
	the onset of symptoms, the patient	underlying infectious or neoplastic		
	has experienced decreased appetite	condition. To explore this further,		
	and has lost 3.5kg in weight.	Abdominal Ultrasound or CT scan		
	Physical examination reveals limited	could help detect any abdominal		
	range of motion in the lumbar spine,	pathologies potentially linked to his		
	tenderness at the spinous processes	right lower abdominal tenderness and		
	of L4-L5, and normal sensory and	fullness.		
	motor function in both lower limbs.			
	There is abdominal fullness and			
	mild tension, along with mild			
	tenderness upon gentle palpation on			
	the right lower abdomen.			
24	A 37-year-old male patient was	Given the patient's clinical	The patient's symptoms are indicative	Treatment for this patient would be
	admitted to the hospital 24 hours	manifestations and X-ray findings, I	of a traumatic spinal cord injury at the	multidisciplinary and involve several
	after a motor vehicle accident,	would recommend further imaging	cervical level given the impaired	stages. Initially, measures should be taken
	where he lost control of the car and	studies including a computed	motor and sensory function in all four	to stabilize his spinal cord injury to
	collided head-on with an obstacle.	tomography (CT) scan and magnetic	limbs (quadriplegia/ tetraplegia). The	prevent further damage. This might
	The patient experienced impaired	resonance imaging (MRI) of the	X-ray findings confirm evidence of	include immobilization, corticosteroid
	motor and sensory function in all	cervical spine. The CT scan can	trauma with loss of physiological	medication to limit inflammation, or
	four limbs following the injury.	provide more detailed images of	curvature and incomplete segmental	surgery to decompress the spinal cord

	Vital signs have remained stable	fractures and is especially helpful in	fractures of C5 and C6 vertebral	and/or stabilize the fractured vertebrae.
	since the injury, and the patient is	assessing the degree of bony injury. An	bodies.	Following the acute stage, rehabilitation
	conscious and alert. X-ray imaging	MRI scan can visualize any damage to		will be crucial for helping the patient
	of the cervical spine reveals loss of	soft tissues, such as ligaments, discs,		recover the maximum possible function
	physiological curvature and	and especially the spinal cord, which		and adjust to life after injury. This may
	incomplete segmental fractures of	may have occurred due to the trauma.		involve physical therapy, occupational
	the C5 and C6 vertebral bodies, with			therapy, vocational therapy, counseling,
	no evidence of fractures or			and other supportive services. It is
	dislocations in other spinal			important to note that recovery from a
	segments.			spinal cord injury can be prolonged and
				each person's recovery potential can be
				different.
25	A 30-year-old male patient who fell	Given the patient's symptoms and the	The abdominal tenderness and	Treatment will depend on the findings
	from a height presents with	mechanism of injury, I would	rebound tenderness could suggest	from the imaging studies. If internal
	abdominal tenderness and rebound	recommend a series of imaging studies.	intra-abdominal trauma, possibly	abdominal injuries are confirmed,
	tenderness. The patient also reports	An abdominal computed tomography	involving organ injury or internal	management might range from
	significant pain and deformity in the	(CT) scan would be appropriate to	bleeding. The reported significant	conservative monitoring to surgical
	right thigh. Despite these symptoms,	assess the extent of the intra-abdominal	pain and deformity in the right thigh	intervention, depending on the severity of
	the patient is conscious and alert.	injuries and to identify any potential	may indicate a fractured femur.	the injuries. A suspected femur fracture
		internal bleeding. As for the right thigh		would typically require orthopedic
		pain and deformity, an X-ray of the		consultation for possible surgical repair
		femur should be performed initially to		with intramedullary nailing or plating,
		evaluate possible fractures.		depending on the type and location of the
				fracture. Post-surgery, the patient would
				benefit from physical therapy as part of

				his rehabilitation to regain strength and
				mobility in the injured limb.
26	A young athlete presents with	Based on the patient's symptoms and	The main diagnosis for this patient	Treatment options for patellar
	patellar pain and weakness in the	physical examination findings, the next	based on the clinical presentation and	tendinopathy typically include a
	right knee for the past three months.	imaging study that should be	nuclear scanning results is patellar	combination of conservative measures and
	The patient experiences pain during	performed is magnetic resonance	tendinopathy, also known as jumper's	rehabilitation exercises. These may
	knee flexion and extension and has	imaging (MRI) of the right knee.	knee. This condition is characterized	include rest, ice, compression, elevation
	difficulty going up and down stairs.	Although the plain X-ray did not show	by pain and dysfunction in the patellar	(RICE), non-steroidal anti-inflammatory
	Physical examination reveals	any abnormalities, MRI can provide	tendon due to repetitive overuse or	drugs (NSAIDs) for pain relief, physical
	tenderness along the edge of the	more detailed information about the	strain. The localized radiotracer	therapy to strengthen the quadriceps and
	patella, a positive patellar grinding	soft tissues surrounding the patella,	uptake in the patella seen on nuclear	improve biomechanics, and modification
	test, and mild atrophy of the	including the tendons, ligaments,	scanning indicates increased	of activities or sports techniques to reduce
	quadriceps muscle. Plain X-ray	cartilage, and muscles. It can help	metabolic activity in the area, which	stress on the patellar tendon. In some
	imaging of the right knee does not	identify any potential structural	is consistent with inflammation or	cases, more advanced treatment options
	show any abnormalities, but nuclear	abnormalities or inflammation that may	degeneration of the patellar tendon.	such as extracorporeal shockwave therapy
	scanning reveals localized	be causing the patellar pain and		or platelet-rich plasma injections may be
	radiotracer uptake in the patella.	weakness.		considered. Surgical intervention is rarely
				necessary but may be considered in severe
				or refractory cases. Regular follow-up and
				monitoring of symptoms and response to
				treatment are important to ensure proper
				management of the condition.
27	A 29-year-old male patient with a	From the presented information,	The primary diagnosis for this patient	In addition, physical therapy may be
	transverse fracture of the midshaft	although the alignment, apposition of	would be delayed union of the right	beneficial to encourage mobilization and
	of the right humerus underwent	the fracture, and internal fixation	humerus fracture. The treatment could	prevent joint stiffness, while being
	open reduction and internal fixation	appear satisfactory on X-ray, the lack	include ensuring optimal conditions	cautious not to apply excessive load to the

	with a plate four months ago.	of significant callus formation four	for bone healing. This can involve	affected limb. It's important to closely
	Follow-up X-ray examination shows	months post-surgery suggests that this	revising the surgical approach if	monitor the patient's progress through
	good alignment and apposition of	patient may be experiencing delayed	necessary, controlling any possible	regular follow-up appointments and
	the fracture, with no evidence of	union.	infections, managing underlying	additional imaging studies as needed. If
	loosening in the internal fixation.	Delayed union is a temporary condition	medical conditions, and adjusting	there is no improvement after these
	The fracture line is clearly visible	in which adequate healing has not	lifestyle factors (such as encouraging	measures, further surgical management
	without significant callus formation.	occurred in the expected time frame.	smoking cessation, if applicable).	such as bone grafting might be considered.
		This can occur for several reasons,		
		including poor blood supply, infection,		
		inadequate immobilization, or the		
		patient's own health status (e.g.,		
		smoking, diabetes).		
		To further evaluate this situation, an		
		MRI could be helpful to assess soft		
		tissue around the fracture site and		
		check for any signs of infection or lack		
		of blood flow. It can also provide		
		additional detailed images of bone		
		marrow, which can help evaluate the		
		process of bone healing.		
28	A 37-year-old male patient presents	Given the patient's presentation and	The primary diagnosis for this patient,	Treatment options depend on the exact
	with pain and swelling in the lower	radiographic findings, further imaging	based on clinical evaluation and X-ray	type and stage of the tumor. For benign
	end of the left femur, along with	studies are warranted to better define	findings, seems to suggest a benign	conditions like chondroblastoma or
	mild restriction of knee joint	the lesion. A magnetic resonance	bone tumor, possibly a	enchondroma, curettage (surgical scraping
	movement for the past seven days.	imaging (MRI) study of the left knee	chondroblastoma or enchondroma.	of the lesion) followed by bone grafting is

	Physical examination reveals a	should be performed next. MRI is	These tumors may cause localized	often the treatment of choice. If the tumor
	localized, tender prominence on the	typically the best imaging modality for	pain, swelling and can lead to	is more aggressive or malignant, surgical
	outer side of the distal femur, with	characterizing bone lesions. It can	eccentrically located bone resorption	resection might be required. In either case,
	normal skin temperature. X-ray	provide detailed information about the	with outward cortical expansion.	referral to an orthopedic oncologist would
	examination shows an eccentrically	lesion itself, including its size,		be advisable for further evaluation and
	growing bone resorption lesion on	composition, and whether or not it		management.
	the lateral condyle of the femur,	involves surrounding soft tissue		The final treatment plan will be
	with outward cortical expansion and	structures. Furthermore, MRI can help		determined after a thorough discussion
	no periosteal reaction.	identify any potential pathological		with the patient considering the benefits
	-	fractures or associated marrow edema.		and risks of each option. Regular follow-
				up visits will be necessary to monitor the
				healing process, manage potential
				complications and detect any recurrence
				early.
29	A 44-year-old female patient	Given the patient's symptoms and	The primary diagnosis for this patient,	Treatment usually starts with conservative
	complains of pain and snapping at	physical examination findings, an	based on her clinical presentation, is	measures such as rest, splinting, non-
	the base of the palm on the volar	ultrasound of the right thumb should be	trigger thumb, also known as	steroidal anti-inflammatory drugs
	aspect of the right thumb for the past	undertaken. Ultrasound can provide	stenosing tenosynovitis of the thumb.	(NSAIDs) for pain relief, and potentially a
	year, with worsening symptoms	real-time imaging of the	This condition occurs when	corticosteroid injection into the tendon
	over the past two weeks. Physical	musculoskeletal structures in the	inflammation or nodular thickening of	sheath to reduce inflammation and
	examination reveals a palpable	thumb, including tendons, pulleys, and	the flexor tendon or its sheath at the	swelling. If these measures are not
	nodule at that site, which is tender to	soft tissue nodules. This could enable	A1 pulley level interferes with the	effective, surgical intervention might be
	touch. Snapping can be felt when	us to visualize any abnormalities such	normal gliding mechanism during	considered, which typically involves
	flexing and extending the thumb.	as a stenosing tenosynovitis or a tendon	thumb motion, leading to triggering or	releasing the constriction by dividing the
		sheath ganglion that may be causing		affected part of the tendon sheath (A1

		the triggering or snapping of the	snapping and potential locking in a	pulley). Physical therapy may also be
		thumb.	bent position.	recommended post-surgery to regain full
				function of the thumb.
30	A 3-year-old male patient exhibits a	Considering the child's age and the	The primary diagnosis for this patient,	Treatment for clubfoot is typically
	gait pattern with toe-walking and	symptoms described, it would be	based on his clinical presentation, is	initiated as soon as possible and often
	landing on the lateral aspect of the	advisable to carry out a series of X-rays	Clubfoot, also known as Congenital	involves a non-surgical method known as
	foot, resulting in an unstable gait.	on both lower limbs and particularly	Talipes Equinovarus (CTEV). This	the Ponseti method. This includes gentle
	Physical examination reveals foot	focusing on the foot and ankle. These	condition is characterized by four	manipulation and casting of the foot,
	dorsiflexion, forefoot adduction,	X-rays should be taken in different	main components: midfoot cavus,	which is changed weekly over several
	inversion, and internal rotation	positions, such as weight-bearing and	hindfoot varus, forefoot adduction and	weeks, gradually correcting the position of
	deformities, but normal skin	non-weight-bearing, to provide a	equinus at the ankle. It typically	the foot. After this period, the child
	sensation.	comprehensive view of any potential	presents at birth and complicates	usually undergoes a minor procedure to
		deformities or abnormalities.	walking if not treated early.	release the Achilles tendon (tenotomy),
				followed by bracing to maintain the
				correction.
31	A 40-year-old female presented with	Given the patient's symptoms and	The primary diagnosis for this patient	As for the treatment plan, initial
	bilateral hip and leg pain during	physical examination findings, further	based on her clinical presentation is	management of lumbar spinal stenosis
	continuous walking, necessitating	imaging studies are needed to provide a	neurogenic claudication possibly due	typically involves conservative measures
	intermittent squatting for the past	more definitive diagnosis. A lumbar	to lumbar spinal stenosis. Lumbar	such as physical therapy for improving
	two years. Initially, she was able to	spine MRI should be performed. MRI	spinal stenosis is a condition where	flexibility, strength and balance, non-
	walk continuously for half an hour,	allows for the visualization of soft	narrowing of the spinal canal occurs,	steroidal anti-inflammatory drugs
	but over time, the duration of her	tissues including intervertebral discs,	which can place pressure on the spinal	(NSAIDs) for pain relief, epidural steroid
	symptom-free intervals gradually	spinal cord, nerve roots, and muscles, it	cord and nerves within, leading to	injections for reducing inflammation and
	decreased. Currently, she	can help detect any potential disc	symptoms such as pain, numbness, or	alleviating pain, and lifestyle
	experiences symptoms after walking	herniation, spinal stenosis or other	weakness in the legs.	modifications like weight loss and quitting
	just 200 meters. Interestingly, she			smoking to reduce pressure on the lower

	remains asymptomatic when lying	abnormalities that may be causing the		back. If these measures fail to alleviate
	flat. On physical examination,	patient's bilateral hip and leg pain.		symptoms, surgical options like
	tenderness was observed at the L4-			decompressive laminectomy or lumbar
	L5 intervertebral space without any			fusion surgery might be considered.
	radiation. Straight leg raising test			
	showed a full range of motion			
	bilaterally at 70°. Sensation and			
	muscle strength in both lower			
	extremities were normal.			
32	A 60-year-old male presented with a	Given the patient's history of a thyroid	The primary diagnosis for this patient,	Given this diagnosis, treatment options
	neck mass for two years and	tumor, his recent fall, and radiographic	based on his clinical presentation and	would often involve a multidisciplinary
	hoarseness of voice for the past four	findings, the next imaging study to be	X-ray findings, is likely metastatic	team approach including endocrinologists,
	months. Two months ago, he	performed should be magnetic	thyroid cancer to the lumbar	oncologists, radiation therapists, and
	underwent a total thyroidectomy due	resonance imaging (MRI) of the spine.	vertebrae. The symptoms of back pain	orthopedic surgeons. Treatment plans are
	to a thyroid tumor, as confirmed by	This would help to further investigate	and immobility, together with the	individualized and may include systemic
	the pathology report. Following the	the vertebral changes seen on the X-ray	abnormal findings on the X-ray	therapy such as radioactive iodine,
	surgery, he accidentally slipped and	and to evaluate for possible metastasis	including compression, flattening,	targeted therapies or chemotherapy, local
	fell on his buttocks while getting out	from the thyroid cancer. MRI provides	absent pedicle, and uneven density of	therapy such as external beam radiation to
	of bed, resulting in low back pain.	high-resolution images and is more	the L3 vertebra, can signify	relieve pain and prevent pathological
	Over the past two weeks, the back	sensitive in detecting bone metastases	destructive metastatic lesions.	fractures, and surgical intervention if
	pain has worsened to the point	compared to an X-ray.		indicated for spinal stabilization.
	where he is unable to mobilize from			
	bed. A lateral X-ray of the lumbar			
	spine revealed compression and			
	flattening of the L3 vertebral body			
	with uneven density. The right			

	pedicle of the vertebra appears to be			
	absent, while the intervertebral			
	space appears normal.			
33	A 66-year-old female patient has	Given the patient's symptoms and X-	The primary diagnosis for this patient,	Treatment usually begins with
	been experiencing recurrent	ray findings, further imaging studies	based on her clinical presentation and	conservative measures, including physical
	headaches and dizziness over the	are necessary to gain a more	X-ray findings, is likely cervical	therapy for improving posture, flexibility,
	past six months. This morning, she	comprehensive understanding of her	spondylosis with possible	and strength, pain management with non-
	suddenly felt vertigo, tinnitus, and	condition. A cervical spine MRI should	vertebrobasilar insufficiency. Cervical	steroidal anti-inflammatory drugs
	nausea with vomiting when she	be performed next. This will allow for	spondylosis refers to degenerative	(NSAIDs), and lifestyle modifications. If
	turned her head quickly. She	detailed examination of the soft tissues	changes in the cervical spine causing	these measures are unsuccessful, surgical
	subsequently fell to the ground but	including the spinal cord, nerve roots,	narrowing of the intervertebral space	intervention might be considered
	experienced relief after	and intervertebral discs. It can help	and formation of osteophytes. These	depending on the severity of the spinal
	approximately two minutes. The	identify potential causes of vertigo and	changes may potentially impinge	cord or nerve root compression and the
	patient reported having had similar	other neurological symptoms such as	upon the vertebral arteries, leading to	patient's overall health status.
	episodes twice in the past. X-ray	disc herniation, spinal stenosis, or	insufficient blood flow to the	
	images revealed posterior	foraminal narrowing due to osteophyte	posterior brain (vertebrobasilar	
	osteophyte formation and significant	formation.	insufficiency), which can cause	
	narrowing of the intervertebral		symptoms such as dizziness, vertigo,	
	space at the C5-C6 vertebral level.		tinnitus, nausea, and vomiting.	
34	A 3-year-old male child presented	Based on the history provided, it would	The primary diagnosis for this	Treatment usually involves a simple
	with sudden crying and refusal to	be appropriate to perform an X-ray	situation, based on the described	reduction procedure performed by a
	use his right upper limb when his	imaging of the child's right upper limb.	clinical presentation, is likely	healthcare professional. This is typically
	mother tried to pull him up the	This can help us identify any potential	Nursemaid's Elbow, also known as	done without the need for anesthesia and
	stairs.	fractures, dislocations, or other injuries	Radial Head Subluxation. This	results in immediate relief of symptoms in
		that could have been caused by the	condition is commonly seen in young	most cases. The child should be able to
		pulling action.	children and occurs when the radial	use his arm normally shortly after the

			head (part of the arm bone) slips out of its normal position at the elbow joint. It typically happens following a sudden pull on the extended pronated arm, just as described in this case.	reduction. After the procedure, instructions will be given to avoid pulling or lifting the child by the arm to prevent recurrence of the subluxation. Regular follow-up visits may be necessary to ensure proper healing and function of the elbow joint.
3	 A 51-year-old male patient presented with pelvic pain following a car accident. He is unable to urinate spontaneously and experiences bladder distension. There is a small amount of bloody discharge from the urethral orifice. His blood pressure is measured at 80/60 mmHg. A digital rectal examination revealed blood-stained gloves. 	Based on the clinical presentation, urgent imaging is required to assess the extent of damage. A pelvic X-ray should be performed initially to identify any potential fractures or dislocations. This should be followed by a computed tomography (CT) scan of the abdomen and pelvis with intravenous contrast to further evaluate for any intra-abdominal or pelvic injuries. CT scan has the advantage of being able to visualize soft tissues, bones, blood vessels, and other structures within the body and can help detect any evidence of internal bleeding, organ rupture, or bladder injury.	The patient's symptoms and examination findings suggest the possibility of a pelvic fracture with accompanying urethral injury. The low blood pressure could be indicative of shock due to internal bleeding associated with the trauma. Blood at the urethral meatus and inability to urinate point towards possible urethral disruption.	Immediate treatment will involve stabilizing the patient's condition starting with addressing the hypotension, which might require intravenous fluids or blood transfusion as necessary. Pain management will also be crucial with appropriate analgesics. Urethral catheterization should be avoided until a urethral injury has been ruled out since it can exacerbate the damage. Once stabilized, orthopedic surgery may be required to fix any bone fractures, and urologic consultation is needed for management of the suspected urethral injury. Depending upon the severity of the urethral injury, conservative management with a suprapubic catheter or surgical intervention may be considered.

				Regular follow-up appointments will be necessary to monitor the patient's response to treatment and to manage any potential
				complications.
36	A 22-year-old male patient	Based on the patient's history and	The primary diagnosis for this patient,	Treatment typically depends on several
	presented with swelling, pain, and	symptoms, the recommended imaging	based on his clinical presentation, is	factors including the patient's age, activity
	functional impairment in his left	study in this case would be an	likely an acute Achilles tendon	level, and the severity of the injury. Non-
	lower leg following a sports-related	ultrasound of the lower extremity to	rupture. This is a common injury seen	operative management involves
	injury. The patient reported	assess for any soft tissue injuries.	in athletes, particularly those involved	immobilization in a cast or boot with the
	experiencing sudden and intense	Additionally, MRI of the left lower leg	in sports that require sudden changes	foot in a position of plantar flexion,
	pain in his left lower leg while	should be considered as it can provide	in direction or speed, such as soccer.	followed by physical therapy for
	rapidly changing direction to chase a	a more detailed evaluation of the		rehabilitation. Surgical repair is often
	soccer ball one hour prior to	muscle, tendon, ligament, and bone		recommended for young, active
	presentation. As a result, he was	involvement.		individuals due to a lower risk of re-
	unable to move and required urgent			rupture compared with non-operative
	transportation to the hospital.			treatment.
37	A 26-year-old female patient	Firstly, in terms of imaging studies, it's	According to the clinical presentation	The treatment should follow the
	presented with swelling, pain,	crucial to perform an X-ray	and physical examination, the primary	guidelines for open fractures. First,
	bleeding, and limited mobility in her	examination of the right lower leg. This	diagnosis for this patient is an open	antibiotic prophylaxis should be initiated
	right lower leg following a car	radiographic examination will help us	fracture of the tibia, more specifically,	immediately, preferably within three hours
	accident. On examination, her vital	assess the type and extent of the tibial	it likely falls under Gustilo and	of injury, to prevent infection. As the
	signs were stable. A 13 cm	fracture and any possible involvement	Anderson type II or IIIA open fracture	patient's tetanus immunization status is not
	laceration was observed on the	of the fibula. Also, it is essential to	given there is no significant soft tissue	known, tetanus prophylaxis should also be
	upper-middle section of the skin of	evaluate the joint above (knee) and	loss but involves a larger wound with	considered.
	her right lower leg, with an exposed		fracture contamination.	

	fracture end of the tibia. Although	below (ankle) the fracture site for any		In addition, the patient requires urgent
	there was significant soft tissue	associated injuries.		surgical intervention. The initial
	contusion, no obvious tissue loss	Secondly, a CT scan might be		management should involve thorough
	was noted, and bleeding was	recommended depending on the		irrigation and debridement of the wound
	minimal. The dorsalis pedis artery	complexity of the fracture observed in		in the operating room, followed by
	was palpable.	the X-ray. The CT scan can provide		fracture stabilization. Depending on the
		more detailed information about the		specific characteristics of the fracture, this
		fracture pattern, comminution, and		may be accomplished through external
		intra-articular extension, which could		fixation, intramedullary nailing, or plate
		influence the surgical plan.		fixation.
				Finally, further wound care including
				possible secondary wound closures or skin
				grafting may be required, as well as long-
				term follow-up for rehabilitation and
				monitoring for potential complications
				such as infection, nonunion, malunion, or
				post-traumatic arthritis.
38	A 12-year-old female patient, a	Based on the patient's presenting	The clinical findings of high fever,	As for treatment, if osteomyelitis is indeed
	student, presented with a one-week	symptoms, I would recommend an X-	localized pain along with the raised	confirmed, it typically involves several
	history of fever accompanied by	ray of the right lower leg and knee joint	count of white blood cells and high	weeks of intravenous antibiotic therapy,
	right lower leg pain for the past	as an initial imaging study to rule out	proportion of neutrophils suggest an	followed by a few weeks of oral
	three days. The patient had	any osseous abnormalities or signs of	infection. The right lower leg pain	antibiotics. It's also important to manage
	experienced fever and sore throat	osteomyelitis. Additionally, a Magnetic	could be suggestive of osteomyelitis,	symptoms and improve function. For pain
	after being exposed to cold	Resonance Imaging (MRI) might be	which is a bone infection usually	management, over-the-counter pain
	temperatures one week ago. The	necessary for a more detailed	caused by bacteria or other germs.	relievers such as acetaminophen or

parents self-administered over-the-	assessment of soft tissue involvement,	This can occur after a minor trauma,	ibuprofen may be used. In severe cases or
counter cold medications (specific	which is often missed on X-rays.	spread from an infection in a nearby	when the infection does not respond to
name unknown) without seeking		tissue, or reach the bone via the	antibiotics, surgery may be required to
medical attention. Over the past		bloodstream.	remove infected tissue and repair any
three days, the patient developed			damage to the bone.
chills, high fever reaching up to			
40°C, and severe pain in the right			
lower leg, which limited her			
movement. On examination, the			
temperature was 38.8°C, respiratory			
rate was 30 breaths per minute, heart			
rate was 110 beats per minute, and			
blood pressure was 100/50 mmHg.			
Specialized examination revealed no			
spinal curvature or tenderness. The			
right knee joint was partially flexed			
and had limited range of motion.			
The floating patella test was			
negative. There was significant			
tenderness in the upper part of the			
right lower leg, but no apparent			
swelling. The local skin temperature			
was elevated with slight redness,			
without visible varicose veins. No			
abnormalities were found in the			
other limbs. Blood tests showed a			

	white blood cell count of			
	19×10^9/L, with 93% neutrophils;			
	hemoglobin level of 92 g/L; platelet			
	count of 213×10^9/L; and an			
	erythrocyte sedimentation rate of 30			
	mm/h.			
39	Immediate intervention is warranted	In terms of imaging, the patient has	For this patient, given his history of	As for treatment, this will largely depend
	in a 20-year-old male patient who	already undergone an X-ray which	acute purulent osteomyelitis and the	on the severity of the condition, but
	had previously suffered from acute	revealed the presence of necrotic bone.	current presentation of recurring	generally involves both surgical and
	purulent osteomyelitis of the right	However, it would be appropriate to	symptoms and X-ray findings, we	medical management. Surgical
	femur six months ago. The patient	proceed with an MRI to assess the	need to consider chronic	intervention is often necessary to debride
	exhibited improvement after	extent of the soft tissue involvement	osteomyelitis. The closure of the sinus	necrotic bone and eliminate any abscesses.
	treatment; however, the presence of	and to detect any possible abscess	tract, along with recurrent signs of	This can involve surgical drainage,
	a sinus tract with occasional	formation. Additional imaging	infection including fever, tenderness,	debridement of the sequestrum, and
	discharge of scanty yellowish	modalities such as a bone scan or, in	swelling, and erythema, coupled with	possibly local antibiotic delivery with
	purulent fluid has persisted in the	some cases, a CT scan may also be	radiographic evidence of sequestrum	bone grafting if there's significant bone
	affected area. Recently, for the past	recommended depending on the	(dead bone that has separated from	loss.
	four days, the sinus tract has closed,	individual case scenario.	living bone), are indicative of such a	After surgery, the patient will typically
	but the patient has developed high		diagnosis.	require prolonged antibiotic therapy,
	fever and significant local			guided by culture and sensitivity results.
	tenderness accompanied by			It's crucial to understand that treating
	erythema and swelling. X-ray			chronic osteomyelitis can be a long
	imaging demonstrates the presence			process, often requiring weeks to months
	of residual necrotic bone with well-			of antibiotics, and sometimes multiple
	formed sequestrum formation.			surgical procedures. Appropriate
				physiotherapy should also be included in

	Given these findings, prompt action is necessary.			the plan to maintain joint mobility and muscle strength. Prompt and aggressive treatment of this patient is critical to avoid serious complications like pathological fractures, septicemia, or even amputation, especially considering the patient's young age.
40	A 40-year-old male presents with pain at the distal end of the femur and mild restriction of knee joint mobility. Physical examination reveals a localized bulge, tenderness, and slightly elevated skin temperature on the lateral aspect of the distal femur. X-ray imaging shows eccentrically growing bone resorption lesions on the lateral condyle of the femur, accompanied by outward bulging and thinning of the cortex, without periosteal reaction.	Given the patient's clinical presentation and radiographic findings, the recommended imaging examination would be a Magnetic Resonance Imaging (MRI) scan. MRI would allow for better characterization of the bone lesion and assessment of any soft tissue involvement. It is particularly useful in evaluating the extent of the lesion, detecting any underlying pathological fracture, and ruling out potential invasion into joint space or adjacent neurovascular structures.	From the information provided, the main diagnosis to consider is a benign bone tumor, such as an osteochondroma. These typically present with asymptomatic bony growths that can cause pain and hinder joint mobility when they press on nearby nerves or tissues. The eccentric growth pattern, outward bulging, and cortical thinning without periosteal reaction observed on X-ray are suggestive of this condition.	The treatment approach depends on several factors, including the size and location of the tumor, the patient's symptoms, and whether the tumor is growing. If the osteochondroma is small, not causing significant symptoms, and not growing, observation might be all that's needed. However, if the patient presents severe pain, limited mobility, or if the tumor is growing or threatening nearby structures, surgical excision could be considered. Preoperative planning should involve a multidisciplinary team, including orthopedic oncology specialists, to ensure optimal outcomes. Remember to provide adequate post-operative care and
				regular follow-up to monitor for recurrence or malignant transformation,

				although these are relatively rare in
				osteochondromas
4.1				
41	A 40-year-old male with a history of	Given this patient's history and	The main diagnosis to consider for	The treatment of AVN varies according to
	long-term corticosteroid use due to a	presentation, the recommended	this patient is avascular necrosis	the severity and stage of the disease at
	skin disease presents with right hip	imaging examination would be an X-	(AVN) of the femoral head, also	diagnosis. Initially, conservative measures
	joint pain, limited mobility, and	ray of the right hip. This will help	known as osteonecrosis. AVN occurs	such as physical therapy, weight-bearing
	approximately 2cm shortening of	determine any changes in joint space,	when blood flow to a section of bone	restrictions, analgesics, and
	the right lower limb over the past six	structural deformities, or presence of	is interrupted, causing the bone cells	bisphosphonates may be used to manage
	months.	bone lesions. Based on the symptoms	to die which can lead to pain and	pain and slow down the progression of the
		and their progression, it may also be	decreased mobility within the joint.	disease. However, if these measures are
		beneficial to perform a Magnetic	Long-term use of corticosteroids is a	ineffective or the disease is advanced,
		Resonance Imaging (MRI) scan. The	well-known risk factor for AVN.	surgical intervention may be considered.
		MRI can provide more detailed		Surgery could involve core decompression
		information about soft tissues,		to reduce intraosseous pressure and
		cartilage, and the extent of potential		promote revascularization, or joint
		bone damage not visible on an X-ray.		replacement in severe cases with advanced
				collapse of the femoral head. It is also
				crucial to address the underlying cause, in
				this case, the long-term use of
				corticosteroids, by exploring alternative
				treatment options for the patient's skin
				condition under the care of a
				dermatologist.
42	A 15-year-old female patient with a	The recommended imaging	Considering the history and	The treatment for this condition is
	history of right distal humerus	examinations for this patient would be	presentation, the main diagnosis is	multifaceted. Initially, physiotherapy and
	fracture five years ago presents with	an X-ray of the right elbow, and a	likely cubitus valgus deformity	non-steroidal anti-inflammatory drugs

	suboptimal reduction and	Nerve Conduction Study (NCS)	resulting from improper healing of the	(NSAIDs) can be used to manage the
	subsequent cubitus valgus	combined with Electromyography	distal humerus fracture, subsequently	symptoms. Bracing or night splints can
	deformity. Six months ago, she	(EMG). The X-ray will help in	leading to ulnar nerve compression,	also be implemented to alleviate
	started experiencing numbness	assessing the degree of deformity,	often referred to as "cubital tunnel	symptoms by preventing flexion of the
	along the ulnar aspect of her right	determining the status of the previously	syndrome".	elbow during sleep, which can exacerbate
	hand.	fractured site, and planning any future		nerve irritation. However, given the long-
		surgical intervention if necessary. Due		term presence and progression of
		to her symptoms of numbness, the NCS		symptoms, surgical intervention may be
		and EMG would be useful in		warranted. This could involve corrective
		confirming any nerve damage or		osteotomy to realign the bones and relieve
		entrapment, specifically that of the		pressure on the ulnar nerve. In severe
		ulnar nerve.		cases of nerve entrapment, ulnar nerve
				transposition might be needed.
				Postoperative physiotherapy would be
				crucial for functional recovery. Regular
				follow-up is also essential to monitor signs
				of improvement or complications.
43	A 58-year-old female fell while	Based on the patient's history of a fall,	The main diagnosis to consider is a	Treatment for femoral neck fractures
	walking outside and experienced	her clinical manifestation and physical	right femoral neck fracture which	depends on several factors including the
	severe pain in her right hip. She was	examination findings, the	often occurs following a low-energy	patient's age, overall health status, and the
	unable to bear weight on her right	recommended imaging examination	trauma, such as a fall, especially in	type and location of the fracture. Non-
	lower limb and required assistance	would be an X-ray of the right hip in	older individuals with risk factors	displaced fractures might be treated with
	to walk. Physical examination	both anteroposterior (AP) and lateral	such as osteoporosis. The clinical	internal fixation using screws. However,
	reveals an externally rotated and	views. This will allow for a	presentation of severe pain, inability	displaced fractures in older patients
	abducted deformity of the right	comprehensive evaluation of the hip	to bear weight, abnormal limb	usually require arthroplasty, either a
	lower limb, with shortening.		position, and positive test for greater	hemiarthroplasty or a total hip

	Tenderness is present along the	joint to identify any fractures,	trochanteric prominence are highly	replacement, due to high rates of non-
	longitudinal axis of the right lower	dislocations or other abnormalities.	suggestive of this condition.	union and avascular necrosis associated
	limb, and there is a positive test for			with these types of fractures.
	greater trochanteric prominence.			Regardless of the specific surgical
				procedure performed, postoperative care
				should include pain management,
				prevention of deep vein thrombosis, and
				early mobilization with physical therapy
				to restore function and independence.
				Additionally, addressing underlying risk
				factors such as osteoporosis is essential for
				prevention of future fractures.
44	Following a sudden brake of a	Given the patient's symptoms and	From the provided information, the	The treatment of such severe spinal cord
	public bus, the patient's head and	history, the recommended imaging	main diagnosis to consider is a	injuries is a complex process involving
	face struck the backrest of the front	examinations would be a computed	traumatic spinal cord injury,	multiple specialties. Initially, it's crucial to
	seat, resulting in restricted neck	tomography (CT) scan and magnetic	specifically at the cervical level. The	stabilize the patient's vital signs and
	movement and flaccid paralysis of	resonance imaging (MRI) of the	sudden impact on the head and neck	prevent secondary injuries. High-dose
	all four limbs. Sensory and motor	cervical spine. This will help in	could have resulted in abrupt	corticosteroids may be administered
	functions are lost below the level of	identifying any bone fractures or	displacement or fracture of the	within the first few hours following the
	the sternal body plane, and the	dislocations and assessing for soft	cervical vertebrae, leading to acute	injury to reduce inflammation and
	patient is unable to urinate	tissue damage including spinal cord	spinal cord compression or	secondary neurological damage.
	voluntarily.	injury.	transection. This is supported by the	Once the patient is stabilized, surgery is
			immediate onset of quadriparesis	often required to decompress the spinal
			(weakness in all four limbs), loss of	cord and fixate the unstable spinal
			sensory and motor functions below	segments. This could involve removal of

			the about and inability to princte	hang fragmants disa matarial or fragtured
			the chest, and madnity to unnate	bone magments, disc material, of fractured
			voluntarily, which indicates disruption	vertebral bodies that are compressing the
			of autonomic functions.	spinal cord (decompressive laminectomy
				or corpectomy), followed by spinal fusion
				and internal fixation.
45	A 19-year-old student has been	Given the patient's symptoms, physical	The main diagnosis to consider for	The treatment plan for osteosarcoma
	experiencing pain in the distal end	examination findings, and X-ray	this patient is osteosarcoma, a type of	generally consists of neoadjuvant
	of the right femur for the past three	results, the recommended imaging	bone cancer that most often occurs in	chemotherapy to shrink the tumor,
	months, with worsened symptoms at	examination would be a Magnetic	teenagers and young adults and is	followed by surgical excision to remove
	night. Examination reveals a	Resonance Imaging (MRI) of the right	frequently located at the distal femur.	the remaining tumor. Depending on the
	localized bulge on the medial aspect	femur. The MRI will provide detailed	Symptoms typically include pain at	location and size of the tumor, limb
	of the distal end of the right femur,	images of the bone and surrounding	the tumor site that can become worse	salvage surgery may be possible, where
	slightly elevated skin temperature,	soft tissues, which is essential for	during the night or with activity,	the tumor is removed while preserving the
	prominent superficial veins,	determining the extent of the lesion,	swelling and redness. The presence of	affected limb. Postoperative chemotherapy
	significant tenderness, and restricted	any potential pathological fracture, soft	lytic bone destruction and Codman's	is usually indicated to prevent metastasis
	knee joint movement. X-ray	tissue mass associated with the primary	triangle on X-ray are classic signs of	and recurrence. Prosthetic or
	imaging demonstrates lytic bone	lesion, or possible invasion into joint	osteosarcoma.	reconstructive surgery may also be needed
	destruction at the distal end of the	space or adjacent neurovascular		depending on the extent of the tumor
	femur, with the presence of	structures.		removal.
	Codman's triangle.			
46	A 38-year-old female has been	Based on the patient's history of long-	From the laboratory results of low	The treatment plan should aim at reducing
	experiencing swollen and painful	term joint swelling, pain, and the	WBC count, low platelet count,	pain, inflammation and the progression of
	joints in both upper and lower	observation of multiple areas of bone	elevated ESR, along with the clinical	joint damage. The NSAID usage can be
	extremities for the past 10 years. X-	destruction in her finger and wrist	manifestations of chronic joint pain,	continued for symptom relief but disease-
	ray imaging reveals multiple areas	joints, further imaging studies are	bone destruction, and an enlarged	modifying antirheumatic drugs

	of bone destruction in the finger	necessary to fully comprehend the	spleen, this patient seems to be	(DMARDs) like Methotrexate should be
	joints and wrist joints. Despite joint	extent of skeletal involvement.	suffering from Rheumatoid Arthritis	considered early in the course of the
	examination, there are still multiple	Therefore, I would recommend a	(RA), with the possibility of Felty's	disease to prevent severe joint damage. In
	painful swollen joints. The spleen is	Magnetic Resonance Imaging (MRI)	syndrome. Felty's syndrome is a rare	case of Felty's syndrome,
	palpable 2cm below the rib margin,	scan. An MRI scans is capable of	complication of longstanding	immunosuppressive therapy may also be
	with a moderate consistency.	providing detailed images of both	rheumatoid arthritis characterized by	needed. Regular follow-ups are essential
	Laboratory results show a white	bones and soft tissues like cartilage,	the triad of RA, splenomegaly, and	to monitor disease progression and adjust
	blood cell count (WBC) of 2×109/L,	ligaments, and tendons. This will allow	neutropenia.	treatment accordingly. Physical therapy
	a platelet count of 60×109/L, an	us to assess any potential damage to		could be beneficial too in maintaining
	erythrocyte sedimentation rate	these structures, which might not be		joint flexibility. If conservative treatments
	(ESR) of 70mm/h, and a negative	visible on X-ray.		fail and joint damage is severe, surgical
	urinalysis. The patient has been			intervention (like joint replacement) may
	taking nonsteroidal anti-			be considered.
	inflammatory drugs (NSAIDs) for			
	the past 10 years.			
47	The patient, a 33-year-old male, was	Given this patient's history and the	The primary diagnosis appears to be	The treatment plan should first focus on
	emergently admitted to the hospital	limited movement of his right wrist and	post-traumatic stiffness of the wrist	physical rehabilitation with a combination
	due to an injury to his right forearm.	fingers after plaster removal, it's	and fingers, which may have resulted	of active and passive exercises under the
	He was diagnosed with a Colles'	necessary to perform further imaging	from immobilization or possible	guidance of a physiotherapist. The goal is
	fracture of the right wrist. Manual	studies. An X-ray of the right forearm	damage to nerves, tendons, or	to gradually restore range of motion and
	reduction followed by plaster	and wrist should be done initially to	ligaments.	function. Hand therapy, which focuses
	external fixation was applied. Six	check for malunion or nonunion of the		specifically on rehabilitation techniques
	weeks later, after removal of the	fractured bone, which could be causing		for hand and arm conditions, could also be
	plaster, significant limitation in	the restricted mobility.		beneficial.
	flexion and extension of the right	If the X-ray does not fully explain the		
	wrist and all fingers was observed.	limitation in flexion and extension, I		

-					
			would then recommend Magnetic		
			Resonance Imaging (MRI) to inspect		
			the soft tissues around the fracture site.		
			This can provide a detailed view of		
			ligaments, tendons, muscles, and		
			nerves, which might have been affected		
			during the initial injury or subsequent		
			treatment.		
	48	A 10-year-old male student presents	Given the symptoms of unilateral knee	Based on the sudden onset of	This is a medical emergency and requires
		with left knee pain that started 36	pain and swelling, inability to fully	symptoms without an apparent cause,	immediate attention. The treatment plan
		hours ago without any apparent	extend the leg, and recent onset fever,	the patient's age, and the other	involves antibiotics to treat the underlying
		cause. Initially, the pain was mild,	it is necessary to perform imaging	symptoms present (fever, chills), the	bacterial infection. These are usually
		and he continued to attend school	studies on this young patient. My	primary diagnosis could be septic	given intravenously at first but can be
		for one day. However, in the	primary recommendation would be a	arthritis (infectious arthritis). This is a	switched to oral form once improvement
		afternoon after school, he limped	plain X-ray of the knee to rule out any	serious condition where a joint	is noted. Severe cases may require
		back home. The pain worsened in	obvious bone abnormalities or trauma.	becomes infected with bacteria,	surgical drainage of the joint to remove
		the evening, causing him to avoid	However, considering the rapid	resulting in painful inflammation.	the infected fluid.
		weight-bearing on the affected limb.	progression of symptoms, an MRI		In addition to treating the infection,
		He is unable to fully extend his leg	should also be considered for a more		management of septic arthritis also
		while lying in bed, finding relief in a	in-depth view of the joint's soft tissue		involves pain relief and maintaining joint
		semi-flexed position. Additionally,	structures. An MRI will help assess		function. This may involve physical
		he experiences generalized chilling	possible inflammation or infection in		therapy after the acute infection has been
		and shivering, followed by the onset	the surrounding tissues such as		controlled. It is important to start this
		of fever. His body temperature has	muscles, tendons, ligaments, and even		therapy early to prevent long-term
		not been measured.	the joint capsule itself. If infection is		

		suspected, a joint fluid analysis may be		stiffness and improve the likelihood of a
		required for definitive diagnosis.		complete recovery.
				Regular follow-ups are essential to
				monitor progress and adjust treatment
				accordingly. If not treated promptly and
				appropriately, septic arthritis can lead to
				severe complications including
				irreversible damage to the joint.
49	A 22-year-old female presents with	Based on the description provided, the	Considering the patient's symptoms	In terms of treatment approach,
	a progressive bending deformity at	patient has already had an X-ray	and X-ray findings, the primary	management of fibrous dysplasia is
	the upper end of the left thigh and	imaging test, which demonstrates some	diagnosis would likely be Fibrous	primarily symptomatic. Medications could
	shortening of the left lower limb	pathological changes. However, to gain	Dysplasia. This is a bone disorder	include pain relievers for discomfort and
	over the past six months. X-ray	a more detailed understanding of the	where normal bone is replaced with	bisphosphonates to slow down bone
	imaging reveals curvature of the left	condition including soft tissues	fibrous bone tissue resulting in	turnover and decrease pain. Surgical
	femoral neck, thickening and	involvement, a Magnetic Resonance	deformities or fractures. It often	intervention may be required depending
	expansion of the cortex, and	Imaging (MRI) scan is recommended.	occurs during childhood or	on the severity of the disease. This could
	thinning of the cortical bone. The	This will provide a detailed image of	adolescence and may affect one or	involve fracture repair, correction of
	medullary cavity demonstrates	the bones, joint and surrounding tissues	many bones. The common site of	deformities, or removal of affected bone
	expansile lytic changes, resembling	such as muscles, ligaments, and	involvement is the femur, tibia, skull,	and replacement with grafting.
	a ground-glass appearance.	tendons. Furthermore, it can detect any	ribs, and pelvis.	Physical therapy may also be beneficial
		tumor or abnormal growth in the bone		for muscle strengthening around the
		marrow and will be helpful in assessing		affected area and improving overall
		the extent of the disease.		function. Regular follow-ups would be
				necessary for monitoring the progress of
				the disease. It is also important to note that

				treatment varies from patient to patient and depends on the location, size, and number of fibrous dysplastic areas. Therefore, an individualized treatment plan should be considered based on each patient's conditions.
50	A 60-year-old male patient has been	Based on the description provided, this	The symptoms presented by the	In terms of treatment approach, initial
	experiencing left shoulder pain for	patient should undergo X-ray of the left	patient including pain with movement	management typically involves
	over two months. The pain is clearly	shoulder initially to evaluate for	and postural activities, decreased	conservative measures such as rest, ice
	related to movement and posture,	degenerative changes like arthritis or	range of motion and tenderness	application, and non-steroidal anti-
	gradually worsening and extending	bony abnormalities. Following this, an	around certain muscles suggest a	inflammatory drugs (NSAIDs) for pain
	to the middle part of the upper arm.	MRI scan of the shoulder would be	diagnosis of Rotator Cuff Tendinitis	relief. Physical therapy can also be
	Activities such as external rotation,	advantageous. The MRI can provide a	or possible Rotator Cuff Tear. The	beneficial, focusing on strengthening
	abduction, and extension are	detailed understanding of the soft tissue	rotator cuff is a group of muscles and	exercises for the shoulder muscles and
	significantly restricted due to the	structures such as tendons, ligaments	tendons that surround the shoulder	maintaining joint mobility. Steroid
	pain. Physical examination reveals	and muscles around the shoulder joint.	joint, providing stability and allowing	injections may be considered if
	mild atrophy of the left deltoid	This will help in identifying	a wide range of motion. Overuse or	conservative treatment fails to alleviate
	muscle, along with notable tender	inflammation, tears or any other	injury can cause inflammation or tears	the symptoms.
	points in the biceps tendon,	damage to these structures.	in these structures leading to pain and	If the patient has a significant tear in the
	supraspinatus muscle, and		limited mobility.	rotator cuff as determined by the MRI,
	infraspinatus muscle. There is also a			surgical intervention may be necessary.
	significant limitation in shoulder			This could involve arthroscopic surgery or
	joint mobility.			open repair depending upon the severity of
				the tear. Post-surgical physical therapy
				would then be vital for restoring function

		and range of motion. Regular follow-up is
		crucial to monitor progress and adjust
		treatment plans accordingly.