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PRACTICAL ELEMENTS OF RHEUMATOLOGY

CLINICAL CASE REPORTS

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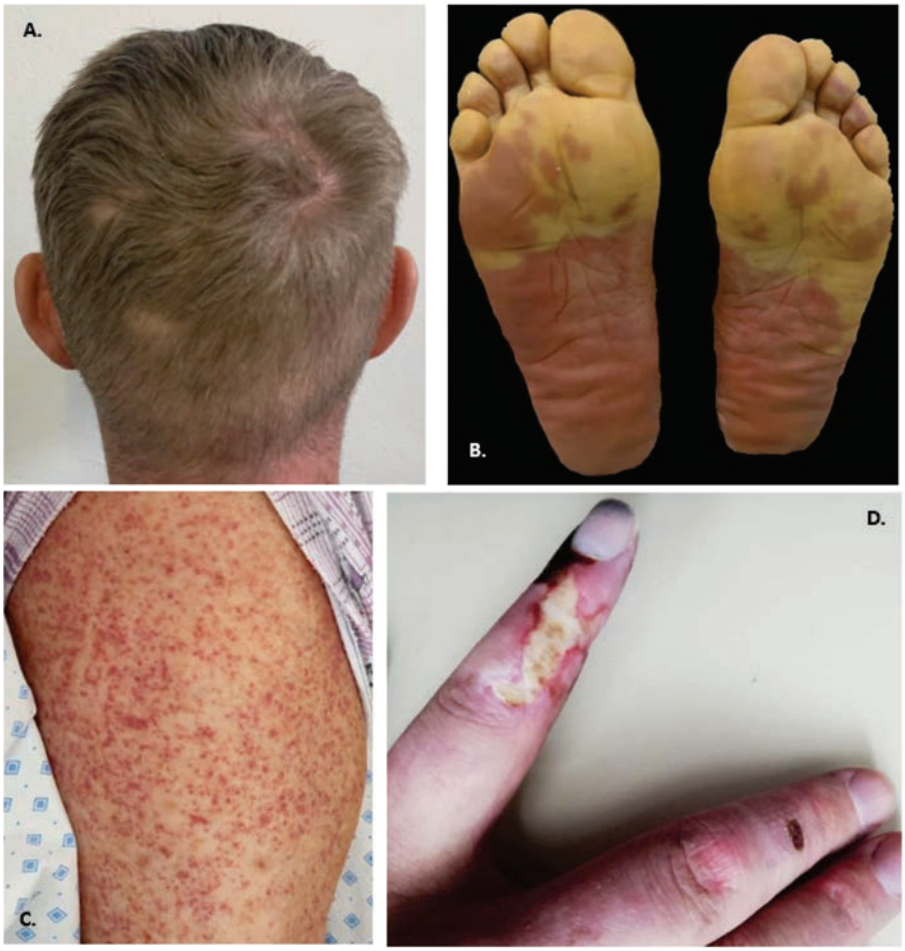
1. CLINIC EXAMINATION OF THE MUSCULOSKELETAL SYSTEM

1.1. Introduction

The clinical examination of the patient must be complete, including all systems. The family history must include questions about autoimmune diseases involving the joint system. The same is true for personal history, alcohol or drug user, smoker, infected with hepatitis B, C or D viruses, HIV, infections with germs specific to sexual transmission such as gonococci or chlamydia. Precipitating recent factors: new drugs, recent infections, environmental exposures, diet, activity, travel history, or trauma [1].

Cutaneous involvement: malar rash, photosensitivity (development of a rash following > 30 minutes of sun exposure), photophobia (ocular sensitivity to light), alopecia, sclerodactyly, periungual erythema, purpura, digital ulcers, psoriasis, nodules, genital lesions, and so on. Raynaud's phenomenon is a result of reversible vasospastic alterations in blood flow manifested in triphasic color response, usually involving the digits, nose-tip, and ears. The initial color is white (ischemic pallor), then blue (congestive cyanosis), and finally red (reactive hyperemia) [1,2].



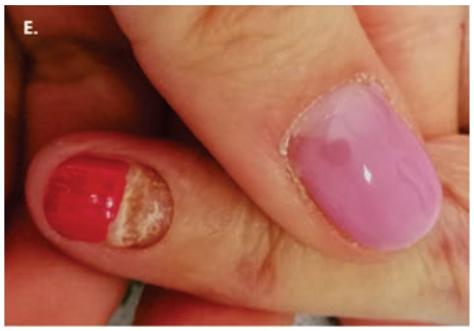


Figure 1.1. A. Alopecia; **B.** Raynaud phenomenon; **C.** Non palpable purpura; **D.** Ulcerative lesion; **E.** Nail psoriasis.
[photo collection of Central Military Emergency University Hospital "Dr Carol Davila"]

Cardiorespiratory involvement: dyspnea, cough, hemoptysis, pleural or pericardial pain, edema, pulmonary embolism, etc.

Gastrointestinal involvement: reflux, dysphagia, abdominal pain, diarrhea, hematochezia, jaundice, etc.

Renal involvement: proteinuria, hematuria, nephrolithiasis, etc.

Hematological involvement: anemia, leukopenia, thrombocytopenia, fetal loss, deep vein thrombosis or pulmonary embolism, abnormal serologies, etc.

Neurologic involvement: Neuropathies, weakness, transient ischemic attack, strokes, seizures, psychosis, cognitive deficits, temporal headache, etc.

A chronological history of symptom progression should include the joints that have been involved and the presence of pain and/or swelling. Character of joint diseases: episodic, additive, for migratory. The pattern of joint involvement: mono, oligo, or polyarticular and/or in a symmetrical distribution. The presence of signs of inflammation: swelling (tumor), Warmth (calor), Erythema (rubor), Tenderness (dolor), loss of function (functio laesa) [1,2,3].

The degree of swelling, tenderness, warmth, and limitation of motion in a joint based on a quantitative estimate of severity. A score of 0 (normal), 1 (mild), 2 (moderate), or 3 (severe) can be assigned to the swelling, tenderness, and warmth categories. Limitation of motion is scored as 0 (normal), 1 (25% loss of motion), 2 (50% loss), 3 (75% loss), or 4 (ankylosis), or range of motion can be recorded in degrees [3,4].

Table 1.1. The differences between inflammatory and mechanical symptoms [1]

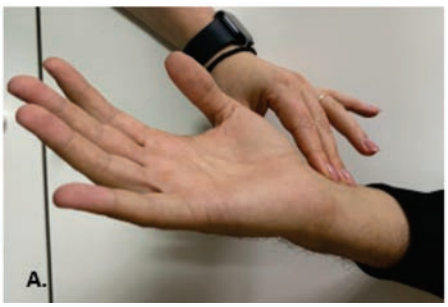
SYMPTOMS	INFLAMMATORY	MECHANICAL
Morning stiffness	>1 hour	≤ 30 minutes
Activity	improve stiffness	worsen symptoms
Rest	cause gelling	improve symptoms
Systemic involvement	+	-
Fatigue	significant	minimal
Corticosteroid responsiveness	+	-

Table 1.2. The typical joints of the rheumatological examination [1,5]	
PERIPHERAL JOINTS	
Hand	**Foot**
Distal interphalangeal (DIP)	Interphalangeal (IP)
Proximal interphalangeal (PIP)	Metatarsophalangeal (MTP)
Metacarpophalangeal (MCP)	Talocalcaneal (subtalar)
Thumb carpometacarpal	Ankle
Wrist	Knee
Elbow	
AXIAL JOINTS	
Shoulder	**Spine**
Glenohumeral	Cervical
Acromioclavicular	Thoracic
Sternoclavicular	Lumbar
Hip	**Temporomandibular**
Sacroiliac	

1.2. Examination of the hand and radiocarpal area

Inspection:

- Compared with the contralateral joint.
- Inflammation signs (rubor) → local inflammation.
- Joint deformities: ulnar deviation, hallux varus, hallux valgus, ligament/cartilaginous damage, bone production.
- 'Rheumatoid hand' IPP swelling, radio-ulnar-carpal /meta-carpo-phalangeal swelling, atrophy of interosseous muscles, "*swan-neck fingers*" hyperextension of the proximal interphalangeal joint and flexion in the distal interphalangeal joints, "*fingers in the buttonhole*" flexion fixation of the IPP joint with IPD hyperextension [3,6].
- Thenar atrophy is a reliable sign of carpal tunnel syndrome (the median nerve supplies sensory innervation to the palmar surface of the thumb, index finger, middle finger, and radial half of the ring finger) → Tinel's test and Phalen's test [1].
- Finkelstein's test: for wrist tenosynovitis (de Quervain's), involving the abductor pollicis longus and extensor pollicis brevis tendons [1,3].



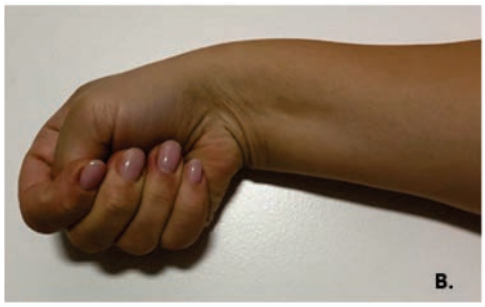


Figure 1.2. A. Tinel's sign; **B.** Finkelstein's test; **C.** Phalen's sign.
[photo collection of Central Military Emergency University Hospital "Dr Carol Davila"]

Palpation:

- Inflammatory signs (heat) – local articular/periarticular inflammation (pain) – at articular/periarticular pressure.
- Joint/periarticular distension: synovial proliferation / ↑ synovial fluid (patellar shock), bone production.
- Joint pains (friction of eroded cartilaginous surfaces) [1,3].

Mobility:

- Joint pains (friction of eroded cartilaginous surfaces).
- Crepitations (tendon damage) [1,3].

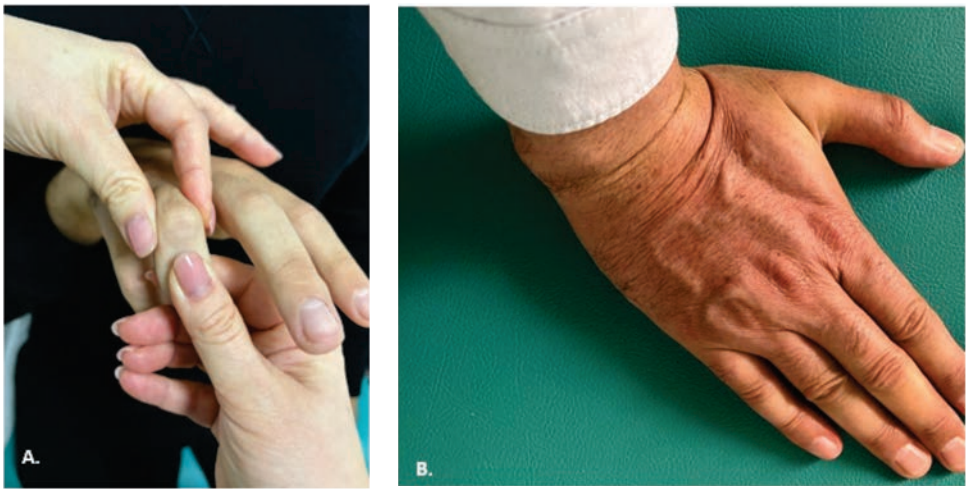


Figure 1.3. A. Four-finger technique for detection of synovitis in the PIP joint of a normal individual; **B.** Visual inspection suggests swelling at the second and third MCP as evidenced by loss of the valley between metacarpal heads and lack of definition of the extensor tendons overlying those joints; **C.** Dorsal two-finger technique in MCP III joint.
[photo collection of Central Military Emergency University Hospital "Dr Carol Davila"]

1.3. Examination of the elbow

Inspection:

- Cubital angle: the angle between the axis of the shoulder and the forearm; *"cubitus valgus/varus*" assessment, swelling, eruptions, scar, deformations [1,3].

Palpation:

- Radial head, elbow joint, lateral and medial epicondyle.
- Signs of articular/periarticular inflammation.
- Olecranon bursitis, epicondylitis (*"tennis elbow"* in lateral epicondylitis) – pain on the lateral face of the forearm during secondary extension of the damage to the tendon of the common extensor of the fingers on the lateral epicondyle and the short radial extensor of the carpus / on the medial face when flexing the hand against a resistance secondary to damage to the radial carpal flexor.

Mobility:

- Flexion, extension, pronation, passive/active supination.

Functionality:

- Touching the nose with the hand, placing the hands behind the neck [1,3,5].

1.4. Examination of the shoulder

Inspection:

- Shoulders and clavicles from the front/ back/ profile/ shoulder height.
- Armpits and teguments.

Palpation:

- Bone landmarks and muscle insertions.
- Sensitivity to palpation – in fibromyalgia.