MULTIPLE MYELOMA WITH BILATERAL HUMERUS LOCATION
CASE REPORT

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MULTIPLE MYELOMA WITH BILATERAL HUMERUS LOCATION: CASE REPORT
(_abstract): Multiple myeloma, also known as Kahler’s disease or myelomatosis, is a type of
cancer that begins in plasma cells. It is the second most common hematologic malignancy
(13%) and accounts for 1% of all cancers. A mnemonic sometimes used to remember the
common tetrad of multiple myeloma is _CRAB_: C = Calcium (elevated), R = Renal failure, A
= Anemia, B = Bone lesions. **Case report**: We present the case of an 70-
year-old male with bilateral humeral location. Diagnosis was difficult because of atypical X-
ray findings in the right shoulder, the classic finding being punched-out lesions. ESR, blood, renal and liver
tests were atypical. **Conclusion**: Although the diagnosis of multiple myeloma is easy, being
based on blood and kidney tests and X-ray examination, in some cases an accurate diagnosis
is obtained only by pathological examination. **Keywords**: MULTIPLE MYELOMA,
PLASMA CELLS, HUMERUS.

Multiple myeloma (MM) is a cancer of plasma B cells, also known as Kahler's
disease or myelomatosis. It is the second most common hematologic cancer (13%)
and accounts for 1% of all cancers (1).

The exact cause of multiple myeloma is not known, and most myeloma patients are
elderly.

It is located in the bone marrow, especially in the vertebrae, ribs, skull, pelvis and
femur and is accompanied by numerous clinical manifestations including anemia,
bone lesions, hypercalcemia, renal dysfunction and compromised immune function. A
mnemonic sometimes used to remember the common tetrad of multiple myeloma is
_CRAB_: C = Calcium (elevated), R = Renal failure, A = Anemia, B = Bone lesions” (2).

Diagnosis is based on the presence of neoplastic plasma cells in the bone marrow
or elsewhere extramedullary together with the presence of multiorgan dysfunctions.

**CASE REPORT**

Patient, aged 70 years, reported about two months earlier a traction injury of the
left upper limb and about 1.5 months ago one of the right upper limb for which he
presented at the Câmpulung Moldovenesc Hospital, Suceava County, where he was
diagnosed with pathological fracture of the middle third of the right humeral shaft and
of the proximal third of the left humeral shaft, both treated by plaster splint. Be-
cause after about two months both fractures were not consolidated, the patient was
referred to our department.

The patient underwent laryngeal surgery.....
30 years ago and surgical removal of a rib segment about 15 years ago, but was unable to provide detailed information. The patient had a first-degree relative with leukemia.

Physical examination showed an increase in volume of the left shoulder and right arm in the middle third. Radiographs showed in the right humerus a relatively well-defined osteolytic area of approximately 30 mm accompanied by fracture (fig. 1A), and in the left humerus a poorly-defined osteolytic area covering the entire proximal humeral epiphysis, with moderate periosteal reaction and extension to the neighboring soft tissues (fig. 1B). Thoracic radiography showed the absence of the lateral arch of the VIII-th right rib of about 8 cm, and lumbar column radiography revealed no osteolytic lesions (fig. 2). Abdominal and pelvic ultrasound revealed hepatic steatosis, homogeneous spleen and prostatic hypertrophy.

![Fig. 1. X-ray - anterior-posterior view: A – right arm, B – left shoulder](image1)

![Fig. 2. Lumbar column X-ray,: A – anterior-posterior view, B – lateral view](image2)
Laboratory tests detected a slight increase in granulocyte count (70.1/%), moderately increased ESR (16 mm/h); total proteins and the other biological tests were normal.

Scintigraphy revealed hyperfixing sites projected in areas of the middle 1/3 of the right humeral shaft, proximal third of the left humerus, very heterogeneous, which appeared to exceed the bone contour. It also detected linear hyperfixed areas at the level of the xiphoid appendix; moderate hyperfixing sites in the posterior arches of the CIX and CX right ribs; heterogeneous hyperfixing in the lumbar spine with moderate hyperfixing at the level of the right costovertebral joints CVIII, CIX and CX. It was concluded that in the context of recent trauma and in the absence of other pathological hyperfixing sites, a traumatic etiology seemed more likely but a tumoral etiology could not be ruled out. (fig. 3).

Contrast enhanced MRI showed the presence of an expansive, solid, heterogeneous formation in the upper third of the left humerus, which disrupted the bone cortical with invasion of the brachial biceps and triceps muscles; with invasion of the left scapula, mainly the superficial muscle plane (supra and infraspinatus muscles), and subscapular muscle (fig. 4A). In the right humerus multiple well-defined sites of “gadolinophilic” lesions of 2 to 30 mm, disseminated intraosseously in the upper two-thirds were seen (fig. 4B).

Fig. 3. Bone scan - full body.
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Pathological examination of hematoxylin-eosin stained slides revealed bone tissue of osteolytic appearance and tumor fragments consisting of a monomorphic plasma cell population, which, in the left humerus, also infiltrated the muscle, these findings being conclusive for the diagnosis of multiple myeloma.

DISCUSSION

The most common locations of MM include the ribs, vertebrae, pelvis and skull cap (3). In our case it was located in the humerus.

In our patient the diagnosis was difficult due to the development of an atypical radiologic image picture in the left shoulder; radiologically, MM is characterized by the presence of "punched-out" osteolytic lesions prevalently located in the shaft of long bones (4).
MM diagnosis can be made with pretty much certainty on the basis of laboratory tests. In our case these were not conclusive enough. MM is characterized by normochromic anemia, normocytic anemia, elevated ESR, hypercalcemia, elevated serum proteins, Bence-Jones protein in urine + (5), while our patient presented only a slight increase in granulocyte counts (70.1/%) and a moderately increased ESR (16 mm/h), kidney and liver tests being normal.

In our patient, diagnostic certainty came from pathological examination performed on tissue biopsy taken from the left shoulder and proximal third of the right humerus.

MM is a malignant neoplasm of plasma cells that remains incurable by conventional chemotherapy, median survival being 2-3 years (6). It is usually chemosensitive, but frequently enters a plateau phase of variable duration (6).

The presented case had an atypical progression with quite important extra-medullary extension. The cases with extraosseous extension of an intramedullary tumor nodule as a result of cortical erosion and subsequent spread beyond the periosteum are not rare, but soft tissues involvement is exceptional occurring in rare forms of IgD MM (7).

REFERENCES


