

Positive bone scan in a bone island A histologically verified case in os capitatum

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A bone island of os capitatum in a 14-year-old boy showed a positive bone scan. The diagnosis was compared with an open biopsy. We conclude that a bone scan cannot definitively differentiate bone islands from more aggressive osseous lesions.

Case report

A 14-year-old boy complained of dull pain in his right wrist of 2 months' duration. The physical examination was normal except for mild tenderness on the dorsal side of his right wrist. Laboratory studies were normal.

A roentgenogram of the right wrist revealed an oval, densely sclerotic lesion, measuring 13 x 9 mm, in the center of the os capitatum (Figure 1). It was intraos-

seous, and had bone spicules that projected slightly from its center to the circumference. There was no evidence of cortical breakthrough, periosteal reaction, or nidus formation.

The site of the sclerotic abnormality corresponded to a solitary increase in ^{99m}Tc -methylene diphosphate uptake on the bone scan. An open biopsy was per-

Figure 1. A 14-year-old boy with pain in his right wrist for 2 months. A sclerotic lesion in the center of the os capitatum corresponds to an area of increased radionuclide uptake.

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formed through a dorsal incision. At the operation, a small ganglion, which originated from the extensor tendon sheath, was removed. The tumor was bony hard, and a part of it was excised under fluoroscopic control.

The histologic findings were typical of a bone island with mature, compact, normal-appearing lamellar bone with a haversian system. One year after the operation, the size of the tumor was unchanged, and the patient had no pain.

Discussion

Bone islands are presumed to be developmental lesions in compact, normal-appearing cortical bone with haversian systems, and usually are discovered as an incidental finding on routine roentgenograms. Bone islands may appear in virtually any skeletal site, but they

are most frequently identified in the bones of the axial skeleton, especially the pelvis and ribs, and in the humerus and femur. Usually, bone islands are stable in size. Sometimes it is difficult to differentiate such lesions from osteoblastic metastases, osteosarcoma, lymphoma, osteoma, and osteoid osteoma. It is ordinarily presumed that scintigraphy can be used to differentiate a bone island from more aggressive lesions.

However, after Sickles et al. (1976) reported the first case of a bone island with a positive bone scan, 9 cases of a positive bone scan associated with a bone island have been reported (Davies et al. 1979, Hall et al. 1980, Roback 1980, Simon and Mulligan 1985). Our case is the first report of a bone island of a carpal bone with a positive bone scan.

We conclude that a bone scan cannot definitively differentiate bone islands from more aggressive osseous lesions, and an examination of a biopsy specimen may be necessary to distinguish a bone island from a more aggressive lesion.

References

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