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Osteoid Osteoma of the Scaphoid: Case Report

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Abstract: Osteoid osteoma (OO) is a benign tumor that affects young subjects and locates itself electively in the long bones. Its localization at the level of the carp and in particular of the scaphoid is rare. We report a case of a young man who consulted for inflammatory pain of the right wrist in relation to an exceptional location of osteoid osteoma in the scaphoid. The typical clinical signs of osteoid osteoma are highly pathognomonic, manifested by progressive inflammatory pain with nocturnal exacerbation, which improves after taking acetyl salicylate. The purpose of the standard wrist radiography is to confirm the diagnosis by finding and locating the nidus, CT and MRI allows better visualization of the tumor in order to plan the operative procedure. The surgical treatment by block resection of the lesion brings healing and allows a good anatomopathological analysis of the tumor postoperatively.
Keywords: Osteoid osteoma- Carp- Scaphoid.

INTRODUCTION

Osteoid osteoma is a rare entity of bone tumors, it is even rarer in the hand and carp, and only a few isolated cases have been reported. Preferentially located on long bones, Carp bone localization remains exceptional

Jaffé described osteoid osteoma (OO) in 1935 [3], Caroll, in the fifties, was the first to study the localization of osteoid osteoma in the hand [4], its preferential location in the hand is at the phalanges, then the metacarpals, however, it can sit at the level of all the carp bones.

Radiography allows establishing the diagnosis in typical forms, strongly guided by the clinical signs which are the main element of this diagnosis. We report in this article an observation of an unusual OO located at the level of the carpal scaphoid in a young man.

CASE REPORT

This is a 22-year-old patient with no specific history, presented to the consultation for progressive pain of the right wrist (the dominant limb), The clinical history had begun two years ago without concept of causal trauma, with a slight pain in the prono-supination at the right wrist antero-lateral border. The pain became almost permanent in a few months, with nocturnal exacerbation and edema in antero-lateral face of the carp. It was attenuated by non-steroidal anti-inflammatory drugs, especially aspirin and less by paracetamol.

X-ray of right wrist showed a radiolucent addition image; a kind of fusiform bone defect taking the lateral part of the scaphoid, with cortical bulging and previous development. Considering the evocative clinical symptomatology, and the mass radiographic characteristics, the osteoid osteoma diagnosis was retained in first intention (Figure 1 and Figure 2).

Surgery was performed under loco-regional anesthesia; the surgical approach was antero-lateral in zig-zag centered on the scaphoid, the lesion was removed in block, and then sent to the laboratory for anatomopathological study whose results were consistent with osteoid osteoma (Figure 3).

The day after the operation, the throbbing pains had disappeared, which is characteristic after osteoid osteoma excision. The wrist was placed in a splint for one month, and self-rehabilitation was performed.

Fig-1: Wrist radiography of the showing the nidus of osteoid osteoma

Fig-2: Wrist radiography of the showing the nidus of osteoid osteoma

Fig-3: Intra-operative image of scaphoid osteoid osteoma

DISCUSSION

Osteoid Osteoma (OO) is a benign tumor of the young adult that is usually found in the long bones diaphyses, near the metaphyseal junctions, with a predilection for the lower limbs [5], it is characterized by a specific structure called nidus, consisting of osteoid tissue and surrounded by reactive osteocondensation. Its localization at the level of the carp is rare (0, 14%), with a predominance of the lunatum and the scaphoid involvement [6].

In the literature, the diagnosis time limit is on average 26 months with extremes ranging from three months to five years, and OO preferentially reach young men [7]. The clinical manifestations are most often evocative, it is night pain, insomniant, totally disproportionate compared to the size of the OO and calmed by the taking of Acetyl salicylate [8], but when an OO occupies joint space; it evolves in an atypical picture of inflammatory arthritis and leads to a limitation of joint mobility [9].

The standard radiographs of the wrist show a central lytic image of small size (nidus) sometimes calcified in its center, surrounded by an important sclerosis interesting the cortical [10], but it is especially Computed Tomography (CT) or even the MRI that make the diagnosis clearly at the first clinical signs, they allow to precisely locate the lesion, as well as the exact size of the nidus and their parameters will guide the therapeutic strategy of excision. Technetium 99 bone scintigraphy is not systematic and can strongly evoke the diagnosis of osteoid osteoma; it shows a clear hyperfixation next to the scaphoid.

The block resection surgery of the lesion is recommended by all authors [11], and a complementary bone autograft is sometimes performed [12]. Various techniques are used to facilitate the intra-operative location of the nidus such as the use of gamma probe, because the osteoid osteoma detection can be difficult and require a large bone excision sometimes disproportionate to the small size of the lesion, followed in some cases by osteosynthesis. The literature reports the emergence of percutaneous radiofrequency techniques guided by CT-scan that have profoundly revolutionized the treatment of these tumors [13].

The evolution is generally towards healing if the nidus removal is complete, this total and definitive osteoid osteoma healing is constant, and our patient does not escape this rule [14].

After OO resection, the anatomopathological examination is essential; it highlights the nidus, well-defined, which consists of an entangled bone osteoid trabeculi network, bordered by a continuous line of osteoblasts and rare osteoclasts, and more or less calcified to which is added a vascularized connective tissue without inflammatory signs. Surrounding this nidus is a zone of 1 to 2 mm of loose fibro-vascular tissue, with few bony trabeculi, and at the periphery a layer of dense cortical bone, the adjacent synovium may present an aspect of synovial reaction [15].

CONCLUSION

Finally, osteoid osteoma is a benign tumor that heals after complete excision. In the case of incomplete surgery, recurrence is possible in about 10 to 15% of cases in a shorter or longer period of up to ten years [16].

Block resection is the treatment of choice for OO and the histological material is of course easier to analyze. The percutaneous radiofrequency treatment is a minimally invasive therapeutic novelty, responsible for few complications and begins to conquer its place among the therapeutic means of OO.

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