Osteoblastoma of the Foot and Ankle (Case Report)

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Article ID: WMC003679
Article Type: Case Report
Submitted on: 11-Mar-2013, 05:49:16 PM GMT Published on: 12-Mar-2013, 06:47:39 AM GMT
Article URL: http://www.webmedcentral.com/article_view/3679
Subject Categories: ONCOSURGERY
Keywords: Osteoblastoma, Ankle, Surgery

How to cite the article: Bassir R, Alidrissi N, Idrissi Kitouni R, Mahfoud M, Bardouni A, Berrada M, Elyaacoubi M. Osteoblastoma of the Foot and Ankle (Case Report). WebmedCentral ONCOSURGERY 2013;4(3):WMC003679

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Source(s) of Funding:
None

Competing Interests:
None
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Abstract

The osteoblastoma of extremities is a very rare benign tumor of bones that occurs during the second and third decade with a clear male ascendency. It is at first spinal, than it achieves long bones of limbs, and rarely extremities.

Its diagnosis is based on a set of arguments: clinic dominated by factors localized, the imaging objective image lytic bone surrounded by a condensing reaction and can invade soft tissue, the pathological examination can confirm the diagnosis by demonstrating a significant proliferation of osteoblastic cells with the presence of osteoid tissue bathed in abundant connective tissue. His only treatment is surgery and complete resection is a guarantee of prevention of recurrence.

We report the case of an osteoblastoma of the ankle in a young adult revealed by localized pain and partial functional impairment.

Plain radiographs did was considered completely normal and with the persistence of complaints, a CT was performed, but was misleading suggestive of osteochondritis. Pathological examination is conducted on the surgical removal which helped correct diagnosis.

The suites in this patient was uneventful, the functional outcome very satisfactory.

Case report

Male patient, aged 32, without particular pathological antecedents, having been 3 months localized pain of the anterior region of the left ankle, severe, permanent, accentuated with the mobilization and ambulation, resistant to anti-NSAIDs and without nocturnal exacerbation.

Clinical examination showed exquisite pain on palpation and mobilization of the ankle with a limitation of flexion and extension by pain, besides we note neither tumefaction, or signs of local inflammation.

A standard radiography was realized and was considered strictly normal.

In front of the obstinacy of the complaints, a scan was made and showed a small gap at the level of the front of the tibial pestle(drumstick) evoking the diagnosis of osteochondritis.

A complete resection of the lesion was realized and the histology confirmed the diagnosis of osteoblastoma by speaking exactly about a fragment communicated, measuring 1.5cm * 0.7cm * 0.5cm was examined according to several continuity shots (sectional drawings). It shows a mild tumoral training of primitive nature, being characterized by a weft mesenchymal made by osteoblastic cells of variable dimension, with exceptional mitotic figures.

The thorough weft is of fibrous nature. There is an important osseous elaboration made by neoformed...
spans with irregular outlines and lined by one sat by osteoblastic cells, with of very rare osteoclast. The set is sometimes separated by hemorrhagic suffusions.

The evolution during two years is satisfactory, with a normal mobility and without pains.

Discussion

The osteoblastoma is a rare osseous tumor; representing 1% of the primitive tumors and 3% of benign tumors. It is for net male ascendancy with a sex feminine ratio of 2/1. All the authors underlined a peak of incidence between 10 - 30 years with an average age of 23 years; indeed the case met to the service is male having an age of 32 years, what coincides with the literature.

The osteoblastoma presents a net preference for the rachis with a 40% frequency, then the long bones with 20%. The infringement of the ankle is very rare, indeed all the bones of the foot, and the ankle represents 6 to 15% of the locations (1, 6, 17).

This suits to the results obtained by the following authors:

1. Thomas and al (1) speak about 12.5% of locations at the level of the foot and of the ankle on a series of osteoblastoma 329.
2. Herman (4) reports 16% of locations on a total of 98 cases.
3. Lucas (6) and al report 9% of locations on a total of 306 cases.

So, the case which we report is particular by its location at the level of the ankle which is rare.

Clinically, the pain is master symptom of variable intensity, exaggerated in the mobilization and walking. At first occasional, then continuous with night-paroxysms, and usually calmed by the grip of salicylic acid, which directs appreciably the diagnosis. They are the same symptoms brought back by our patient, but the usual medical treatment is without efficiency. (5)

Radiologically, in the typical forms the diagnosis of the osteoblastoma of the ankle is usually based on the standard radiography only! What was different in our observation. At the ankle, the location is frequently sub periosteal, the tumor typically appears as a small lytic area within a cortical condensing reaction of variable intensity, its contours are not always sharp, sometimes marked by a sclerotic reaction. (7, 8, 9)

Although our observation all normal radiographs. TDM provides a detailed analysis of bone lesions and extra-osseous tumor expansion and remains the basic examination in the diagnosis of osteoblastoma, but our patient images provided by TDM were misleading suggesting an alternative diagnosis of osteochondritis. (10, 11)

To differentiate osteoblastoma from osteoid osteoma, the diameter is an important discriminator, osteoid osteoma is usually less than 1cm, the other radiographic features are as important as the absence of marked reactive sclerosis, a elongated shelled periosteum and the presence of an extension to soft tissues, especially in the sub periosteal osteoblastoma. The aggressive osteoblastoma may cause extensive destruction of bone matrix, soft tissue, and a periosteal reaction, making it difficult to distinguish from osteosarcoma. (13, 14)

Descriptively, the osteoblastoma is very limited lesion, inside the bone, usually unilateral, whose size is more than 2 cm. But small tumors may exist. Pathological point of view, the osteoblastoma appears macroscopically as a compact tissue red, hemorrhagic, brittle and crumbly. Microscopically it is highly vascularized tissue formed by immature bone and osteoid tissue, with many osteoblasts, giant cells and few osteoclasts, all bathed in abundant connective tissue. The classic form has a little reaction osteogenesis device and the soft tissue just invaded (15).

It is important to note that the histological appearance is similar to osteoid osteoma and the border between both is difficult to fix, the beam of arguments: size, location, radiological and histological study can make the diagnosis.

Definitive diagnosis is based on curettage - excision of the tumor with histological study of the operative piece objectifying the presence of osteoblastic tumor. (16) The results in the literature after surgical resection are good, however the recurrence rate is about 10% and cases of malignant transformation have been reported. for our case, the evolution with a decrease of three years was marked by the disappearance of pain, preservation of normal mobility and a very satisfactory flexion - extension. (17)

As well our observation is characterized by:
1. A normal radiograph.
2. A TDM misleading.
3. Only histological examination allowed to make the diagnosis.

Conclusion

At the end of this study:
Localized bone pain, night exaggeration, calmed by salicylates, without general symptoms, affecting a teenager or young adult must remind osteoblastoma!
Once the diagnosis is made, surgical treatment is necessary for the disappearance of pain and prevention of complications.
Treatment is usually easy in peripheral locations and gives good results, untreated or inadequately treated; the evolution can be recurrence, aggressive or malignant transformation.

Bibliography

Illustrations

Illustration 1

Plain radiographs of the left ankle (preoperative) normal.

Illustration 2

The scan of the left ankle showing a lacunar image on the anterior border of tibia
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