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RESEARCH ARTICLE

CHONDROSARCOMAS OF THE HAND: A REPORT OF THREE CASES

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Abstract

Chondrosarcoma of the hand is very rare. We report three observations of chondrosarcoma of the hand, which enable us to make a review of its pathology. The follow-up was up to 2 years.There were two women and one man with an average age of 48 years old (30, 85 and 31). The localisation was phalangeal in two cases and metacarpal in one case, one case followed for chondroma. The three cases were central. X-rays were characterized by the presence of lytic areas with calcifications and in one case, we showed a calcification in the peripheral tissue. Histological diagnosis was made by biopsy (grade 2 in two cases and grade 1 in one case). Treatment consisted of amputation of the finger in two cases. In the case of metacarpal localization, wide resection of concerned ray. The patients showed no local recurrence and no metastatic spread after 2 years.The chondrosarcoma in the hand may due to malignant change in a pre-existing chondroma. He is the most common malignant bone tumor of the hand. This shows that the diagnosis of a chondrosarcoma can only be made in the synopsis of the radiological, histological and clinical findings.The metastasis of hand chondrosarcomas is very rare but has been described. With regard to the local recurrence rate, the data in the literature varies between 11% and 50%. Conservative treatment is difficult due to the small size of the hand, which allows easy spread of the tumor from compartment to compartment.Despite the low metastatic potential of chondrosarcomas of the hand in comparison with other sites, ray resection or digital amputation is recommended to avoid local recurrence. In cases with only local excision, close follow-up is recommended.

Introduction:-

Chondrosarcoma of the hand is very rare. Lichtenstein and Jaffe first described it in 1943. The rarity of the hand chondrosarcoma, associated with the problems of histological interpretation, which it poses, make that it can be confused in a certain number of cases with a chondroma, even more that the latter can degenerate into chondrosarcoma. Treating a chondrosarcoma of the hand like a chondroma is fraught with consequences. Indeed, the resumption of surgery becomes more aggressive in order to take away all the areas contaminated by non-cancer surgery. Through three observations, we have tried to illustrate certain aspects of hand chondrosarcoma and to group together the clinical, radiological and anatomopathological signs which allow the diagnosis to be made. We have also raised the various therapeutic possibilities.

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Case reports:

Case 1:

A 30-year-old Woman, with no notable disease history; presented 2 years earlier a swelling of the 5th left finger, which became painful, touching the first and 2nd phalanges on the palmar and dorsal side (Figure 1,2). Physical examination revealed a predominant hard dorsopalmary swelling on the 1st phalanx and extending to the 2nd.

The X-ray showed a lytic image of P1 with rupture of the radial cortex and the distal epiphysis with invasion of the base of P2 (Figure 3.4). A biopsy was performed and the histological diagnosis of chondrosarcoma was suspected.

The little finger was disarticulated at the metacarpophalangeal in front of the extension of the lesions. The histological examination revealed a morphological aspect suggestive of a well-differentiated grade 1 chondrosarcoma that was retained before the radioclinical and histological comparison.

The extension assessment was negative without recurrence or metastasis with a 2-year follow-up.

Figure 1:- Swelling of the 5th left finger.

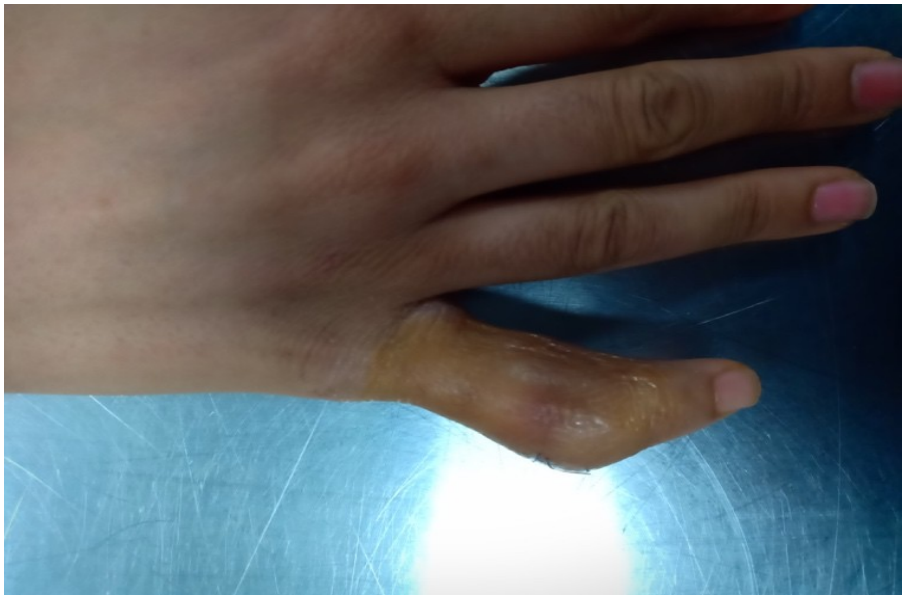

Figure 2:- Swelling of the 5th left finger.

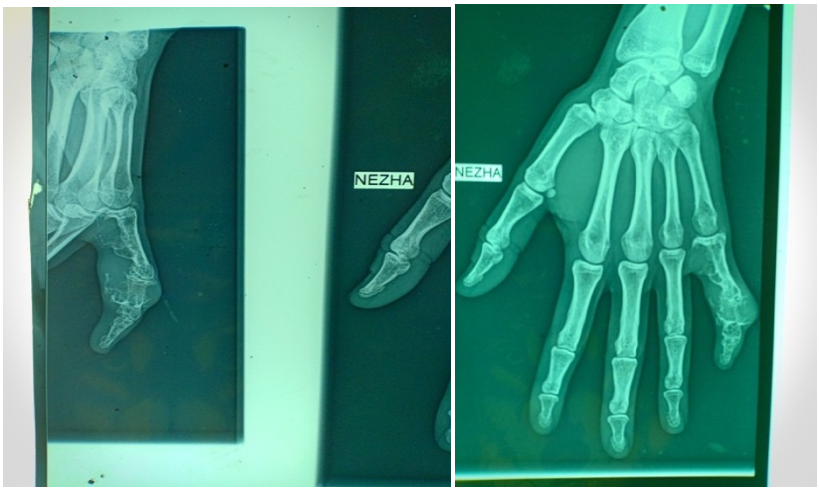

Figure 3, 4:- lytic image of P1 with ruptureof the radial cortex and the distalepiphysis of the radial cortex and the distal epiphysis with invasion of the base of P2.with invasion of the base of P2.

Case 2:
A 85-year-old Woman, followed for diabetes under treatment and chondrome on the 2nd phalange of the 4th finger; presented 1 year earlier an exaggeration of the swelling and pain in this finger. Physical examination revealed a predominant hard dorsopalmary swelling on the the chondrome localization.

The X-ray showed a lytic image of P2 with rupture of the radial cortex and the distal epiphysis with calcification in the peripheral tissue without invasion of the P1 and P2. Malignant degeneration was confirmed by histological examination.

The 4thfinger was disarticulated at the metacarpophalangeal. The histological examination revealed a morphological aspect suggestive of a differentiation grade 2 chondrosarcoma that was retained before the radioclinical and histological comparison.

The extension assessment was negative without recurrence or metastasis with a 2-year follow-up.

Case 3:
A 31-year-old Man, with no notable disease history; presented 2 years earlier, a swelling and pain of the first left metacarpal. Physical examination revealed a predominant hard dorsal swelling on the first metacarpus.

The X-ray showed a lytic image with rupture of the radial cortex of the metacarpal shaft and the distal epiphysis. A biopsy was performed and the histological diagnosis of chondrosarcoma was confirmed.

The first ray was disarticulated at the trapeziometacarpal joint. The histological examination revealed a morphological aspect suggestive of a differentiation grade 2 chondrosarcoma.The extension assessment was negative without recurrence or metastasis with a 2-year follow-up.

Age	Gender	Interval symptoms-operation	Concerned bone	Operation	Grading	2 years Follow-up	
30	W	2 years	P1-P2 5th finger	Metacarpophalangeal disarticulation	G1	0	
85	W	1 year	P2 4th finger	Metacarpophalangeal disarticulation	G2	0	
31	M	2 years	1st metacarpus	trapeziometacarpal joint disarticulation	G2	0	

Table 1:-Description of the patients.

Discussion:-

Chondrosarcoma is the most common malignant bone tumor in the hand [1]. The average age of our patients was 48 years lower than in the literature [2, 3].

The duration from the first symptoms to the first operation in our patient population varied between 1 to 2 years, other authors also report long periods, up to 72 years [3]. This shows that a long course of symptoms isn't a criterion to rule out malignancy.in our cases, there was no Ollier disease or Maffucci syndrome, which is known to be associated with a high risk of degeneration and a tendency towards metastasis [4,5]. The repeatedly discussed possibility of malignant degeneration of a pre-existing chondroma should be seen as a rare exception [6]; rather, the preparation should be assessed by a reference pathologist if there are any doubts.

In most cases, as in our patient population, the conventional X-rays already show malignancy criteria such as cortical bone destruction, lysis zones, expansive and locally displacing growth and the periosteal reaction [3, 6].

The histological differentiation between chondroma and chondrosarcoma on the hand is difficult because the transitions are not clearly defined [3] and chondromas of the hand and foot may have a higher cell abundance and atypia than in other places [7, 8].

This shows that the diagnosis of chondrosarcoma can only be made by looking at the radiological, histological and clinical findings.

Metastasis of hand chondrosarcomas is very rare, but has been described [2, 9, 10]. For this reason, staging should be carried out after diagnosis.

Regarding the local recurrence rate, the data in the literature vary between 11% and 50% [1]. No tumor metastasis or local recurrence was found in our patient population. Studies confirms that the chondrosarcomas are locally aggressive tumors with a low metastatic rate, which accordingly require local radical therapy with safe removal of the tumor in healthy conditions. With regard to the therapy recommendations, most authors also tend to use locally aggressive measures, such as finger amputation or radiation resection, in order to avoid local recurrence [2,10]. Bovée and co-workers. [7] Consider excision to be sufficient in many cases due to the low tendency to metastasis. If one decides on the last-mentioned procedure, however, we consider that close checks are necessary.

Conclusion:-

Chondrosarcoma located in the hands is a diagnostic and therapeutic challenge. Distinction between benign and malignant lesions is not always easy; the same could be said about low- and high-grade lesions. Indeed, these neoplasms are believed to have a more benign behaviour compared to chondrosarcoma located elsewhere: they are locally aggressive, but show poor tendency to metastasize. The principle goal of surgery shall be minimizing functional impairment. This provides the rationale for performing curettage, local adjuvant therapy and bone grafting in low-grade lesions. This treatment has proven itself useful even in the management of local recurrence. High-grade lesions should be treated with radical resection.

Data Availability:-

Patient's data are stored in a hard disk and available to check upon request from the corresponding author.

Conflicts of Interest:
The authors declare that they have no competing interests

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