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Rheumatoid Nodules: the importance of a correct differential diagnosis

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SUMMARY

Knuckle pads is a syndrome characterized by the presence of multiple nodules located on the extensor side of the interphalangeal or metacarpophalangeal joints. Several conditions can be confused with Knuckle pads. We describe a case of a 47-years-old man who developed multiple bilateral roundish nodules located in the skin over the dorsal and lateral interphalangeal joints in both hands.

This 47-years-old man presents, since several years, multiple roundish nodules located in the skin over the dorsal and lateral interphalangeal joints, in both hands (Figure 1). He works as an artisan and has not an important clinical history. X-rays examination of his hands were negative for erosive lesions of the bones. He underwent two biopsies, which were described as “fibro-adipose tissue containing numerous tortuous granules surrounded by a palisade of histiocytes. These granules contained a nucleus of fibrinoid necrotic tissue and neutrophils. The exam is compatible with the diagnosis of rheumatoid nodules or perforating annular granuloma” (Figure 2).

He had the diagnosis of Rheumatoid Arthritis; for this reason, he got a therapy based on corticosteroids, Hydroxycloquine and Methotrexate.

After few months, the patient stopped this therapy, because he had not benefits.

To our observation, the patient is asymptomatic for pain, swelling or bones' deformation, and presents many nodules on both hands. Because of the lack of all the standards for rheumatoid arthritis' diagnosis (RA-test, Waaler Rose, Anticitrulline antibodies, flogistic index negatives and a

normal lipidic pattern), we decided to look in the current literature for similar cases. In this way, we find similar case-reports, which are referred in the so-called “Knuckle Pads Syndrome”.

Figure 1 - Roundish nodules located in the skin over the dorsal and lateral interphalangeal joints



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Figure 2 - Histologic picture of the biopsy



Knuckle Pads Syndrome was described for the first time by Garrod in 1893. The terms knuckle pad could be regarded as a misnomer due to the fact that the majority of these lesions occur over the proximal interphalangeal joints and not over the knuckles or the metacarpophalangeal joints. The pads may be solitary or multiple and they can range between few millimetres and 4 cm.

It can be genetic or associated with several other acquired conditions as repetitive trauma, hobbies, and dangerous or apparently harmless habits (1, 2).

The knuckle pads syndrome is often associated with other acquired conditions, such as Dupuytren's or Peyronie's disease. More important, it can appear in the Degenerative Collagenous Plaques of the Hands (DCPH) or in the Acrokeratoelastidosis (AKE), and this underlines the necessity of a correct differential diagnosis (3).

There are some other conditions that can be confused with knuckle pads, like Rheumatoid Nodules and Granuloma Annulare, Multicenter reticulohistiocytosis.

Rheumatoid nodules are the most common extra-articular manifestation of Rheumatoid Arthritis.

Rheumatoid nodules are located on body prominences, extensor surfaces or adjacent to joints.

Granuloma annulare is a benign skin condition that consists of grouped papules in an enlarging annular shape. It

most often occurs on the lateral or dorsal surfaces of hands and feet.

Multicenter reticulohistiocytosis is a rare condition characterized by destructive polyarthritis (not present in our case) associated to mucocutaneous nodules.

Finally, in the Knuckle Pads Syndrome, we have firm dermal papules, nodules or plaques, located on the extensor aspect of the interphalangeal or metacarpophalangeal joints, with hyperkeratosis and mild acanthosis and slight proliferation of fibroblasts and capillaries with thickened, irregular collagen bundles in the derma.

Because of its variability in histological and clinical history, knuckle pads cannot be defined as "disease", but as "syndrome". At presents, there are five histological known variants of knuckle pads syndrome, that are:

- Hypodermal juvenile fibromatosis.
- Dermohypodermal granulomatous fibromatosis.
- Histology similar to DCPH.
- Histology similar to AKE.
- Epidermal hyperkeratosis with no significant dermal lesion (probably, our patient's variant).

Knuckle pads therapy is not necessary, because the lesions are asymptomatic and they don't reduce hands' function. Eliminating the source of repetitive trauma may improve the lesions; intralesional injection of corticosteroids may reduce the size of lesions. Application of salicylic acid can dissolve the intercellular substance, with desquamation of the horny layer of the skin but without affecting structures of the visible epidermidis. At the end, surgical intervention may be indicated if knuckle pads cause a functional problem, but there is a high probability of recurrences.

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