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Case report

Rice-body formation without rheumatic disease or tuberculosis in a “sausage” ring finger

Masse en grains riziformes sans étiologie rhumatoïde ni tuberculeuse entraînant un aspect de « doigt en saucisse »

M. Cegarra-Escolano^{a,*}, C. Jaloux^b, O. Camuzard^{a,c}

^a Department of Plastic and Reconstructive Surgery, University Center of Nice, Pasteur II Hospital, 30, voie Romaine, 06001 Nice, France

^b Department of Plastic and Reconstructive Surgery, University Center of Marseille, Conception Hospital, 147, boulevard Baille, 13005 Marseille, France

^c UMR E-4320 TIRO-MATOs CEA/DRF/BIAM, Nice Sophia Antipolis University, 28, avenue de Valombrose, 06107 Nice cedex, France

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ABSTRACT

Rice bodies are very unusual lesions, generally encountered in chronic synovitis due to rheumatoid diseases or tuberculosis. A 31-year-old right-handed man presented with a 15-year history of progressively growing “sausage-like” swelling of the 4th finger and palm of his right hand. There was an immovable, painless mass with restriction of the finger’s ROM without local or general associated signs. Imaging showed a large non-aggressive mass within the tendon sheath. Complete excision of the mass was performed. Histopathological examination showed synovial villi with rice bodies and central necrosis suggestive of tuberculous synovitis or rheumatoid arthritis (RA). Tests for mycobacterial infections were all negative and there was no argument in favor of a rheumatoid pathology. There is no established standard treatment in a case like ours, which has no origin in tuberculosis or RA. Prolonged follow-up will be needed to confirm absence of recurrence after complete excision.

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R É S U M É

Les lésions à grains riziformes sont rares, généralement rencontrées dans les synovites inflammatoires chroniques telles que rhumatoïdes ou tuberculeuses. Nous présentons le cas d’un patient sans infection tuberculeuse ni pathologie rhumatologique, qui a présenté une lésion à grains riziformes développée à la face palmaire. Un homme de 31 ans, droitier, s’est présenté dans le cadre d’un « doigt en saucisse » intéressant le 4^e doigt et la paume de la main droite, d’évolution progressive depuis environ 15 ans. L’examen trouvait une masse immobile, indolore avec restriction des amplitudes articulaires en flexion de l’ensemble du 4^e doigt. Aucun symptôme local ou général n’était associé. Les examens d’imagerie ont révélé une lésion volumineuse d’allure non agressive développée au niveau de la gaine des tendons fléchisseurs. Nous avons réalisé une excision complète de la lésion. Les résultats anatomopathologiques ont montré des villosités synoviales en forme de grains de riz avec une nécrose centrale évoquant une tuberculose ou une polyarthrite rhumatoïde. Les analyses biologiques réalisées ont exclu une tuberculose, et il n’y avait pas d’argument pour une pathologie rhumatoïde. Ces cas de lésions à grains riziformes sans tuberculose ni pathologie rhumatoïde sont extrêmement rares, et il n’existe pas de traitement de référence décrit dans la littérature pour des cas similaires. Un suivi prolongé sera nécessaire afin de confirmer l’absence de récurrence après excision complète de la lésion.

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* Corresponding address. 86, avenue de Saumur, 40150 Soorts-Hossegor.
E-mail address: m.cegarrar.escolano@gmail.com (M. Cegarra-Escolano).

1. Introduction

Rice bodies are infrequent lesions, generally encountered in tuberculosis or rheumatoid arthritis (RA), although uncommon for hand surgeons [1]. The main diagnoses for localized swelling of the flexor tendons sheath are synovitis, giant cell tumor or sarcoma [2,3]. Rice-body formation in joints can occur in chronic inflammatory diseases such as RA, systemic lupus erythematosus (SLE), synovial chondromatosis, pigmented villonodular synovitis, gout, sarcoidosis, or chronic fungal infection [1,3]. Nonetheless, a few cases of rice bodies have been described in healthy patients [1,2,4]. Rice bodies correspond to a central area of fibrinoid necrosis or fibrosis surrounded by hypertrophic synovial folds of an oblong shape, and epithelioid and gigantic cell granulomas. There is no established diagnostic or treatment procedure in the absence of an obvious cause. We present the case of a young patient with no history of tuberculosis or rheumatoid arthritis who required surgical treatment for rice bodies located on the palmar side of the fourth finger and palm of his right hand.

2. Case report

A 31-year-old right-handed man, former construction worker, native of Maghreb, presented with a 15-year history of progressively growing mass on the volar side of the fourth finger of his right hand. He had no associated pain and consulted because of altered range of motion (ROM). Since the lesion did not cause him any discomfort, he had never sought treatment before due to the medical costs in his country of origin.

Physical examination of his right hand revealed “sausage-like” swelling of the fourth finger and palm with an immovable, painless mass. The finger’s ROM was restricted: metacarpophalangeal (MCP) joint 0/0/70°, proximal interphalangeal (PIP) joint 0/0/50°, distal interphalangeal (DIP) joint 0/0/50°. No skin lesion or redness was observed (Fig. 1). He denied fever and night sweats. The patient had no relevant medical history, in particular no tuberculous infection or contagion, and no rheumatoid diseases. The rest of the physical examination was normal.



Fig. 1. Preoperative clinical appearance.

Laboratory test results including C-reactive protein (CRP), tuberculin test and erythrocyte sedimentation rate (ESR) were also normal.

Radiographs, computed tomography (CT) scan and magnetic resonance imaging (MRI) revealed a wide soft tissue lesion described as a large non-aggressive soft tissue mass within the flexor tendon sheath. Radiologic analysis was suggestive of chronic synovitis or a synovial-based mass such as giant cell tumor or synovial sarcoma (Fig. 2).

Given that complete removal was possible based on the radiologic images, we decided not to perform a biopsy because of the risk of local spread associated with the atypical appearance of the lesion. The mass was resected completely while keeping the flexor tendons, A2 and A4 pulleys and neurovascular structures intact. Intraoperatively, we observed a pearly mass measuring 10 × 3 cm within the tendon sheath, extending from the carpal tunnel to the DIP joint (Fig. 3), filled with formations resembling rice grains. The tendon sheath was inflamed and thickened.

Histopathologic examination showed synovial villi with rice bodies and central necrosis, and epithelioid granulomas. This finding was consistent with tuberculous synovitis or RA. Histochemical staining for acid-fast bacilli (Ziehl-Neelsen stain) and bacterial cultures from multiple samples were negative for mycobacteria. No other bacterial or blood test supported the presence of an infection. The patient was evaluated for autoimmune and rheumatologic disease. Rheumatoid factor, anti-dsDNA, anti-RNP (< 0.2 AI), anti-SS-A (< 0.2 AI), and anti-SS-B (< 0.2 AI) antibodies were within normal limits. Antinuclear antibodies and HLA B27 association were negative. It was concluded that the patient did not meet the criteria for rheumatologic disease.

Normal ROM was regained immediately after surgery, and the recovery was uneventful. No recurrence was noted at the 1-year follow-up visit.

3. Discussion

Rice-body formation has been described in cases of tuberculosis or atypical mycobacteria infections with accompanying symptoms such as pain, local inflammatory signs, general symptoms (pulmonary involvement or lymphadenitis [5]), and a local progression involving skin, tendons or bone [6]. The early recurrence rate of tuberculous tenosynovitis is more than 50% within the first year [2,3,7]. Tuberculosis in the hand can take the form of cutaneous nodules or ulceration, tenosynovitis, arthritis, compound ganglion (affection of the radio-ulnar bursa) and dactylitis (short bones osteomyelitis) [1,5,8–11].

In cases of other chronic inflammatory disease such as RA, pain and tendon rupture are generally associated with local swelling. Early recurrence occurs if an appropriate anti-inflammatory treatment is not provided [12]. Other differential diagnosis include synovial chondromatosis, pigmented villonodular synovitis, gout, sarcoidosis, SLE, chronic fungal infection and atypical mycobacterial infection [3].

Considering these elements, our case of a 15-year progression of rice-body formation without any accompanying signs or local progression and no formal cause is very rare. Seronegative RA was very unlikely given the patient’s characteristics (gender, age, clinical progression, laboratory results).

The patient’s age and original country were arguments in favor of a mycobacterial infection. But natural history, absence of associated signs and completely negative laboratory results refuted this etiology. The strongest argument for tuberculosis

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