



Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Mass of the thenar eminence hiding idiopathic massive rice bodies formation with a compression of the median nerve: Case report and review of the literature

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ARTICLE INFO

Article history:

Received 1 June 2018

Received in revised form 17 July 2018

Accepted 22 July 2018

Available online 26 July 2018

Keywords:

Hand

Rice body

Median nerve

Case report

ABSTRACT

INTRODUCTION: Rice bodies are described as fibrin bodies usually found among patients with inflammatory joint diseases, tuberculous arthritis, and tuberculous tenosynovitis, but they are rarely found among non-tuberculosis patients.

CASE PRESENTATION: We report a case of a 69-year-old with a 2-year history of swelling and pain of the thenar eminence of the left hand with paresthesia in the territory of the median nerve. Surgical exploration revealed multiple rice bodies.

DISCUSSION: Several authors have speculated on the nature of rice bodies. Their presence is highly suggestive of tuberculous tenosynovitis. One case of a primary brucellar tenosynovitis has been reported. In Morocco, brucellosis and tuberculosis remain a significant problem, with synovial chondromatosis and pigmented villonodular synovitis as differential diagnoses.

CONCLUSION: The patient had no history of tuberculosis, rheumatic disease, joint trauma, or infectious disease. Despite extensive evaluation, the etiology of the rice bodies could not be identified, and no underlying pathology was found.

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1. Introduction

Rice bodies are well known to orthopedic surgeons, rheumatologists, and other specialists interested in inflammatory joint diseases [1]. They are described as fibrin bodies found in 25% of inflamed joints during surgery and aspiration procedures [2,3] but also among patients with tuberculous arthritis and/or tuberculous tenosynovitis [4]. However, rice bodies are rarely seen among non-tuberculosis patients. We report a case of 69-year-old man with a mass of the thenar eminence and compression of the median nerve. The patient was cared for in the department of trauma and orthopedic surgery of the Ibn Sina university hospital in Rabat. To the best of our knowledge, this is the first such case in Morocco, and only a few cases have been reported in the literature. This work has been reported in line with the SCARE criteria [5].

2. Case presentation

A 69-year-old, right-handed, man living in a rural area and formerly employed by the textile industry was referred by a physician to the department of trauma and orthopedic surgery of our University Hospital with a 2-year history of progressive swelling and pain of the left hand. The patient had been in repeated contact with animals but had no history of tuberculosis, rheumatic disease, joint trauma, or infectious disease. In the physical examination, a soft mass of the left thenar eminence measuring 2 × 5 cm, with no sign of local inflammation, was found (Fig. 1). Wrist and hand motion were preserved. He presented paresthesia in the median nerve territory. We suspected an infectious or rheumatic disease, and a tumor was not excluded. Laboratory data, including complete blood count, erythrocyte sedimentation rate, C-reactive protein, rheumatoid factor, antinuclear antibody, and anti-cyclic citrullinated protein antibody, were normal. Brucellosis serology and a tuberculin reaction test were negative, and a chest radiogram was normal. Radiography showed a soft-tissue mass shadow without any apparent calcification (Fig. 2). Magnetic resonance imaging showed a regular thickening of the finger flexor sheath on both sides of the carpal tunnel measuring 25 × 45 mm with multiple

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Fig. 1. Clinical image showing the mass of the thenar's lodge of the left hand.

rice bodies (Fig. 3). The radiological diagnosis was synovial chondromatosis. One week later, the decision to perform exploratory surgery was made. The patient was placed in a supine position with the left upper limb on a support. Then, surgical exploration was performed under loco-regional anesthesia. A 10-in. curved incision was made on the ulnar side of the thenar crease, the presence of multiple rice bodies was noted visually. The rice bodies were removed, and a thorough excision of the sheath was performed, respecting the neurovascular structures. The carpal tunnel was also released (Fig. 4). Histopathological examination revealed a chronic non-specific synovitis, and results of culture and PCR for tuberculosis were negative. The surgical treatment allowed us to relieve the patient's symptoms without additional medical treatments, and his recovery was uneventful without any postoperative complications. The patient regained good function after 4 months (Fig. 5). One-year follow-up revealed no underlying disorder.

3. Discussion

In 1895 Riese described the first case of rice bodies in association with tuberculosis [1]. The incidence of these formations is less than



Fig. 2. Radiography of the hand and wrist showing a soft-tissue mass shadow without any apparent calcification.

50% of cases of tuberculous tenosynovitis [4], and their presence in the joint fluid of patients with rheumatoid arthritis may be more common than hitherto suspected [3].

Several authors have speculated on the nature of rice bodies. Albrecht et al. indicated that fibrous rice bodies represent an end product of synovial inflammation, proliferation, and subsequent secondary degeneration [3]. Cheung et al. suggested that rice bod-

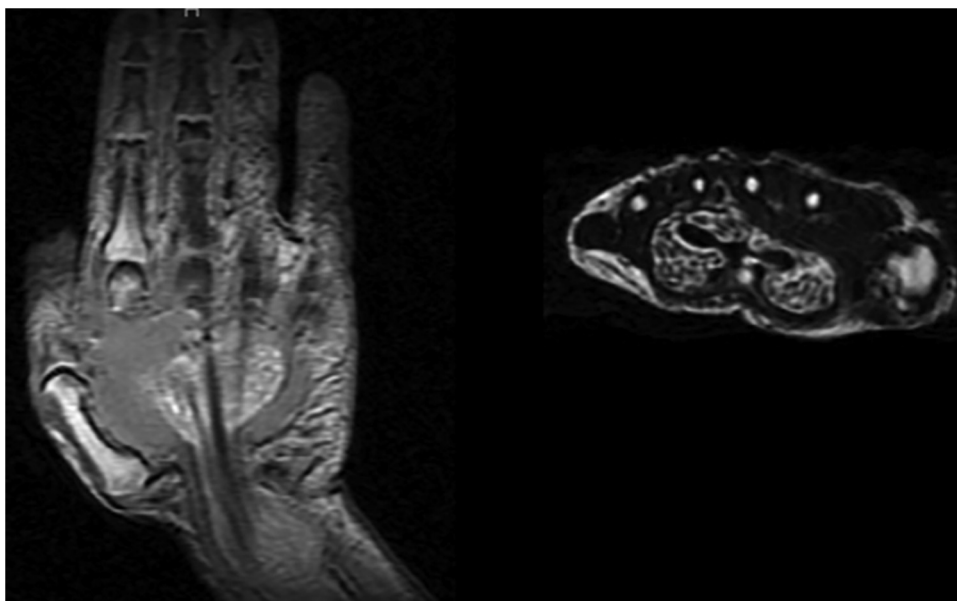


Fig. 3. Coronal and axial views of magnetic resonance images showing thickening of the finger flexor sheath on both sides of the carpal tunnel.



Fig. 4. Intra-operative image showing multiple rice bodies.



Fig. 5. Clinical image after 4 months.

ies arise from infarcted synovial cells, and these cells are shed into articular or bursal fluid [6]. Berg et al. suggested, in an electron microscopy study of rice bodies obtained from the joints of rheumatoid arthritis patients, that non-vascularized rice bodies might have formed *de novo* as part of an inflammatory reaction in the synovial fluid [7]. In our case, the patient had no history inflammatory disease, so the cause of rice body formation is still obscure.

Nagasawa et al. reported a case of a 68-year-old man with rice body formation in the flexor tendon sheath of the fingers without any history of inflammatory diseases [8]. Muirhead et al. reported a case of a 9-year-old boy with rice bodies in the tendon sheath of the right tibialis posterior tendon subsequent to a thorn injury [9], and Sugano et al. reported an 81-year-old man with rice bodies in the common flexor synovial sheath of the left wrist [10]. In these cases, the rheumatoid factor was negative, and patients had no history of tuberculosis, similar to in our case.

Rice bodies have been reported as a cause of subacromial bursitis of the shoulder [11] and have been identified during exploration of a large intrapelvic synovial cyst [12]. Rice bodies have also been reported as a cause of painless effusion and synovial hypertrophy in the knee joint of an 11-year-old boy [13]. In none of these cases was any underlying pathology reported.

Lluch et al. report the first case of a primary brucellar tenosynovitis of a 34-year-old woman previously employed in a slaughterhouse in contact with cows and goats. Histology showed nonspecific chronic synovitis, and a diagnosis of brucellosis was based on positive serology [14]. Woon et al. reported that operative findings of rice bodies, millet seeds, or melon seeds are highly suggestive of tuberculous tenosynovitis [15]. In Morocco, brucellosis and tuberculosis remain significant problems. In the present case, the rural origin of the patient, a history of contact with animals, and the initial clinical evaluation led us to the diagnosis of first tuberculosis or brucellar tenosynovitis, then rheumatoid arthritis. We excluded these diagnoses on the basis of the patient's history and laboratory results. Magnetic resonance imaging results led us to a diagnosis of synovial chondromatosis. Pigmented villonodular synovitis was the differential diagnosis, and a tumor was not excluded. Histological examination allowed us to eliminate this diagnosis; consequently, the etiology could not be identified, and no underlying pathology was found.

4. Conclusion

In conclusion, we have reported the case of a 69-year-old man with rice body formation in the hand and compression of the median nerve. The etiology of these rice bodies remains unknown. Furthermore, the pathogenesis of these formations must be studied and the diagnostic accuracy of all tests compared to solve this clinical problem.

Conflict of interest

The authors report no conflicts of interest.

Funding source

All authors disclose that this manuscript didn't received no specific grant from any funding agency.

Ethical approval

This is a case report and the patient give us informed consent for publication so therefore ethical approval is exempt at our institution.

Consent

The patient gave informed consent for publication.

Authors contribution

Fekhaoui Mohammed Reda and Grimi Talal make substantial contributions to acquisition of data, conception and design, and analysis and interpretation of data.

Lamrani Moulay Omar, Berrada Mohammed Saleh, Boufettal moncef and Bassir Reda-allah participate in revising it critically for important intellectual content and give final approval of the version to be submitted.

Registration of research studies

This case report don't need to be registered because is not first-in-man.

Guarantor

Mohammed Reda FEKHAOUI and Talal Grimi.

Acknowledgments

We thank Pr. Berrada, Pr. Lamrani, Pr. Boufettal and Pr. Bassir for assistance and comments that greatly improved the manuscript. We also like to show our gratitude to the anonymous reviewers for their comments on an earlier version of the manuscript, and any errors are our own and should not tarnish the reputations of these esteemed persons.

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