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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A B S T R A C T

INTRODUCTION: Rice bodies are described as fibrin bodies usually found among patients with 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].

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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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 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-
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.

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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.

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References

[1] H. Riese, Die Reiskörpchen in tuberculöser Synovialsäcken, Deutsch. Z. Chir. 42 (1895) 1–99.
[2] E.D. Caughey, T.C. Highton. Components of the fibrinolytic system in synovial joints: normal bovine compared with normal and abnormal human synovial joints, Ann. Rheum. Dis. 26 (1967) 297–305.
[3] M. Albrecht, G.V. Marineti, R.F. Jacobi, J.H. Vaughan, A biochemical and electron microscopy study of rice bodies from rheumatoid patients, Arthritis Rheum. B (1985) 1053–1063.
[4] L.H. Pimm, W. Waugh. Tuberculous tenosynovitis, J. Bone Jt. Surg. 39B (1957) 91–101.
[5] R.A. Agha, A.J. Fowler, A. Saetia, I. Barai, S. Rajmoham, D.P. Orgill, for the SCARE Group. The SCARE statement: consensus-based surgical case report guidelines, Int. J. Surg. 34 (2016) 180–186.
[6] H.S. Cheug, L.M. Ryan, F. Kozin, D.J. McCarty, Synovial origins of rice bodies in joint fluid, Arthritis Rheum. 23 (1980) 72–76.
[7] F. Berg, R. Wainwright, B. Barton, H. Puchtler, T. McDonald. On the nature of rheumatoid rice bodies: an immunological, histochemical, and electron microscope study, Arthritis Rheum. 20 (1977) 1343–1349.
[8] H. Nagasawa, K. Okada, S. Sennna, S. Chuda, Y. Shimada, Tenosynovitis with rice body formation in a non-tuberculosis patient: a case report, Ups. J. Med. Sci. 114 (2009) 184–188.
[9] D.E. Muirhead, E.H. Johnson, C. Luis, A light and ultra-structural study of rice bodies recovered from a case of date thorn-induced extra-articular synovitis, Ultrastruct. Pathol. 22 (1998) 341–347.
[10] H. Sugano, T. Nagao, Y. Tajima, Y. Ishida, K. Nagao, T. Ohno, et al., Variation among giant rice bodies: report of four cases and their clinicopathological features, Skeletal Radiol. 29 (2000) 525–529.
[11] R. Steinfeld, M.G. Rock, D.A. Younge, R.H. Coffer, Massive subacromial bursitis with rice bodies. Report of three cases, one of which was bilateral, Clin. Orthop. Relat. Res. 301 (1994) 185–190.
[12] O. Tamai, T. Mamadi, Y. Muto, T. Toda, Large synovial cyst of the pelvis containing rice bodies. A case report, Int. Orthop. 22 (1998) 325–327.
[13] M. Asik, I. Eralp, O. Cetik, L. Altinel, Rice bodies of synovial origin in the knee joint, Arthroscopy 17 (2001) E19.
[14] A. Lluch, S. Barreira-Ochoa, J. Cortina, X. Mir-Bullo, Brucellosis as a primary cause of flexor tenosynovitis on the hand: case report and literature review, J. Hand Microsurg. 7 (2015) 140–142.
[15] C.Y. Woon, E.S. Phoen, J.Y. Lee, M.E. Puliaforman, Y.P. Peng, L.C. Teoh, Rice bodies, millet seeds, and melon seeds in tuberculous tenosynovitis of the hand and wrist, Ann. Plast. Surg. 66 (2011) 610–617.

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