



Rice body mass formation mimicking a neoplastic disease around the trochanteric bursae of the hip

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Multiple rice body formation is an uncommon inflammatory process. Sometimes it leads to a big mass in unusual locations. Although sometimes associated with bursitis and systemic diseases, such as rheumatoid arthritis, the pathophysiology of this rare entity is still obscure. We present a 29-year-old woman with multiple rice body mass formation in the trochanteric bursa of the left hip. She was operated, and had no recurrence at 18 months after the surgery.

Key words: Neoplasia; rheumatoid arthritis; rice body; trochanteric bursitis.

Multiple rice body formation around the joints is an uncommon inflammatory process. It may lead to a big mass in atypical regions. It generally occurs within or around the joints or in the bursae with or without a known cause. The obscure pathophysiology of this rare entity still needs to be investigated. Rice bodies are encountered in some systemic diseases such as; rheumatoid arthritis, osteoarthritis, microcrystalline arthritis, lupus erythematosus, seronegative arthritis and infectious arthritis (atypical mycobacterial infection or tuberculosis). Rice body formation may also be encountered without any underlying systemic disorders. There is couple of reports involving several joints and bursae with the multiple rice body formation, but none of them involving the trochanteric bursae of the hip.

In this report, we present a rice body formation in the trochanteric bursae, which is an unusual localization for this pathology. Best to our knowledge, no report of giant trochanteric rice body mass was reported previously.

Case report

A 29-year-old woman presented with a painless mass in the left trochanteric region, which appeared 8 months ago without any obvious trauma history. The patient had first admitted to general surgery department where an open drainage of the lesion was performed with a suspected diagnosis of trochanteric bursa infection. However, the cultures of the drainage material remained sterile. The lesion recurred after a month and become bigger within 2 months, and then the patient was referred to orthopedic clinic with that growing mass. On physical examination there was an immobile soft tissue mass of 15x8 cm diameter over the lateral aspect of the left greater trochanter. There was no sign of fluctuation. No redness or local heat as a sign of inflammation was detected. The hip joint mobility was unaffected.

The patient was evaluated by infectious disease and rheumatology physicians. She had no clinical symptoms and laboratory findings suggesting systemic disease like rheumatoid arthritis or tuberculo-

sis. Laboratory findings were within normal limits except for a slightly elevated erythrocyte sedimentation rate, which was 20 mm/h (normal value 18 mm/h). C-reactive protein concentration level and urine analysis results were normal. HLA-B27 and anti-nuclear antibodies were negative. Rheumatoid factor was slightly elevated 16.2 IU/mL (normal value ≤ 8.8) and the tuberculin skin test was negative.

Plain radiographs revealed a soft tissue mass shadow around the lateral side of the proximal femur without evidence of calcification or bony involvement.

On magnetic resonance imaging, (MRI) there was fluid accumulation and numerous uniform loose bodies within the left trochanteric bursa (Fig. 1a and 1b). Post-contrast fat suppression - T1 weighted axial images (Fig. 1c) showed synovial proliferation prominent at medial wall of the bursa and pathologic enhancement along the synovial lining consistent with inflammation.

According to the findings of physical and radiological examinations a chronic trochanteric bursitis was suspected an excisional bursal biopsy was

decided as a surgical procedure. The procedure was performed by a senior surgeon (OT) through the lateral incision. Subcutaneous tissue was divided in the line with the skin incision. Before starting the dissection methylene blue was injected inside to the trochanteric bursa to differentiate the borders of the mass from the healthy tissue. The mass was bigger than the preoperatively palpated dimensions (Fig. 2). It was extending till the neurovascular bundle anteriorly and till the sciatic nerve posteriorly. The bursae and its contents were excised totally in one piece (Fig. 3). During the procedure, numerous smooth, ovoid shiny loose bodies were found in the inflamed bursa (Fig. 4). After haemostasis, a suction drain was placed in and wound was closed in layers. The patient's early postoperative process was uneventful. The suction drain was removed after 24 hours postoperatively and rehabilitation program was started as soon as the sutures had been removed at the 14th day postoperatively.

Histopathological examination showed a benign process with inflammation of the trochanteric bursa. The fibrinous material and collagen constituent of the loose bodies confirmed rice body formation as

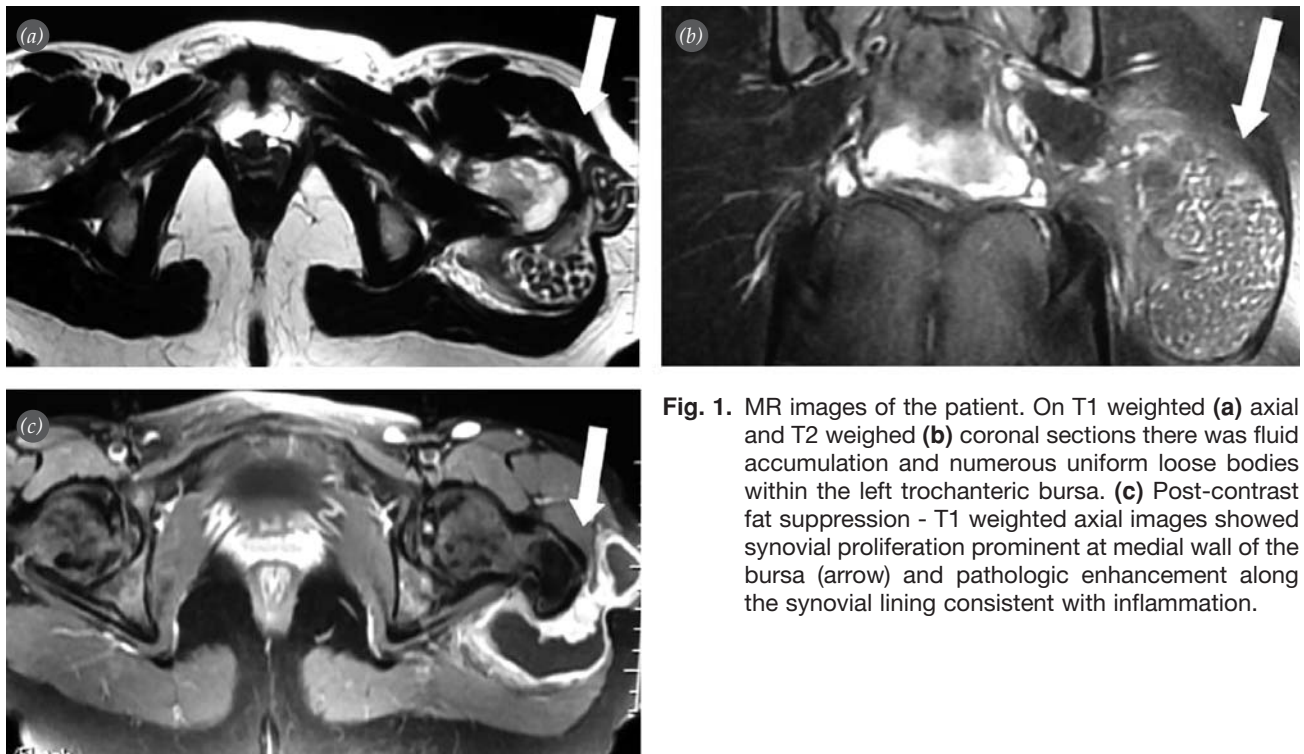


Fig. 1. MR images of the patient. On T1 weighted (a) axial and T2 weighed (b) coronal sections there was fluid accumulation and numerous uniform loose bodies within the left trochanteric bursa. (c) Post-contrast fat suppression - T1 weighted axial images showed synovial proliferation prominent at medial wall of the bursa (arrow) and pathologic enhancement along the synovial lining consistent with inflammation.

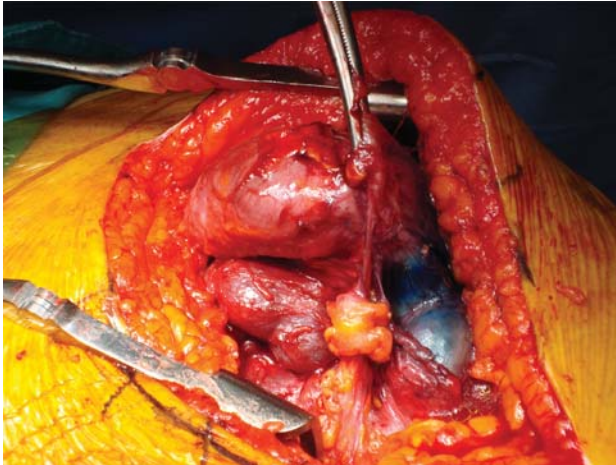


Fig. 2. Intraoperative view of the mass. Methylene blue injection helped the identification of the bursal tissue.

the histopathological diagnosis. The fibrinous exudate was seen as loose or attached by inflammatory granulation stalks to the underlying synovium or pannus (Fig. 5).

The mycobacterial, aerobic and anaerobic cultures obtained from the bursal tissue during the operation remained negative. There was no recurrence of the lesion at the last follow-up of 18 months.

Discussion

Several conditions can be considered in the differential diagnosis of the lesions at the trochanteric region. In this report, we present a rice body formation in the trochanteric bursae, which is an unusual localization for this pathology. To our knowledge no previous study reported multiple rice body formation in the trochanteric bursa without any underlying cause.

Popert et al.^[1] suggested that rice bodies are ovoid shaped soft tissue nodules macroscopically resembling shiny white rice beans and microscopically consisting of an inner amorphous core of acidophilic material surrounded by fibrin and collagen. The pathogenesis of the rice body is unclear. Others suggest that early rice bodies are formed de novo in synovial fluid independently of synovial elements and progressively enlarge with aggregation of fibrin.^[2]

Rice body is an end result of synovial proliferation and degeneration with the production of collagen, cell debris and fibrin. Histologically, the fibri-



Fig. 3. The bursae and its contents with loose bodies were excised totally in one piece.



Fig. 4. Numerous smooth, ovoid shiny loose bodies were found in the inflamed bursa.

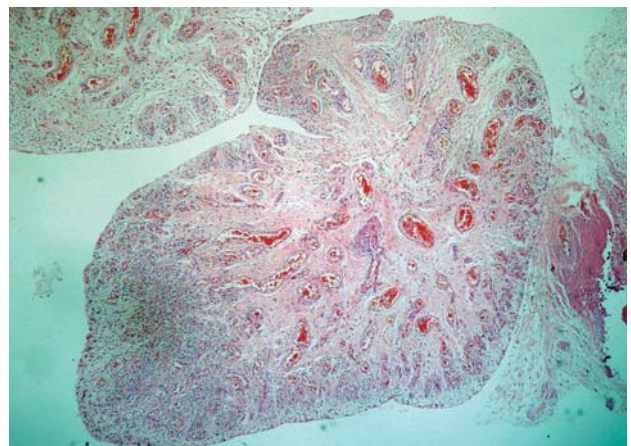


Fig. 5. In the histopathological examination the main constituent of loose bodies was fibrin with lesser amount of collagen. They were freely mobile in the joint or attached to the inflamed synovium from which they arose (H-E x100).

nous exudate is seen as loose or attached by inflammatory granulation stalks to the underlying synovium or pannus. Rice bodies are the result of progressive detachment of these fragments. In the histopathological examination of the reported case the main constituent of loose bodies was fibrin with lesser amount of collagen. They were freely mobile in the joint or attached to the inflamed synovium from which they arose. All of these findings confirmed the diagnosis of rice body formation.

Multiple rice body mass formation may be associated with the chronic inflammatory processes such as, occult infection, mycobacterial tuberculosis, rheumatoid arthritis, osteoarthritis, and microcrystalline arthritis.^[2-5]

Tuberculosis bursitis, without coexisting active bone and joint tuberculosis, may affect any sites of involvement are the bursae, including greater trochanteric, prepatellar and olecranon bursae in the literature.^[2,4,6] Although the appearance and localization of the rice bodies in our case, were similar to those noted from bursitis of mycobacterium tuberculosis,^[1,2,4,6] tissue section staining for acid fast bacteria (Ziehl-Nielsen stain), the tuberculin skin test and tissue cultures for mycobacteria were all negative.

MRI revealed large bursal expansion, effusion and multiple small nodular structures that appeared hypo- to iso-intense with the muscle tissue on both T1 and T2-weighted images, which were consistent with the literature and supporting the diagnosis.^[4-8]

Clinical outcome of conservative treatment are not well reported.^[3] Total excision is the treatment of choice to prevent recurrence if multiple rice body formation is arisen by the inflamed bursal tissue or tenosynovium.^[9,10]

In conclusion, we presented a patient with a painless trochanteric bursal mass of unknown origin. Soft-tissue tumors, tenosynovitis, infection, bursitis, rheumatoid arthritis and tuberculosis were consid-

ered in the differential diagnosis. After the surgical excision and histopathological examination of the mass a diagnosis rice body formation was confirmed. Neither risk factor, nor a predisposing condition was present in our case and the etiology of rice body formation remained unknown.

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