

Bursectomy, Curettage, and Chemotherapy in Tuberculous Trochanteric Bursitis

Luis R. Ramos-Pascua, PhD, José A. Carro-Fernández, MD*, José A. Santos-Sánchez, PhD[†], Paula Casas Ramos, PhD, Luis J. Díez-Romero, MD, Francisco M. Izquierdo-García, PhD[‡]

*Departments of Orthopedics and *Medicine, Hospital Universitario de León, León,*

[†]Department of Radiology, Hospital Universitario de Salamanca, Salamanca,

[‡]Department of Pathology, Hospital Universitario de León, León, Spain

We presented three patients with trochanteric tuberculosis and described the clinical and imaging findings of the infection. Histology revealed a necrotizing granulomatous bursitis and microbiology confirmed tuberculosis. All cases were successfully treated with bursectomy and curettage of the trochanteric lesion and antituberculous chemotherapy including isoniazid, pyrazinamide, rifampicin, and ethambutol.

Keywords: *Tuberculosis, Bursitis, Trochanter*

Tuberculosis of the bone and joint occurs in approximately 1%–3% of patients with tuberculosis. Tuberculous trochanteric bursitis is an exceptional form of musculoskeletal tuberculosis that occurs in people who are not at risk for developing tuberculosis, a disease with increasing incidence.^{1–4)} The misleading clinical aspect and the insidious course of the symptoms can delay diagnosis when the illness has not been suspected.³⁾ Knowledge of the condition is essential for prompt treatment. The purpose of this report was to draw attention to the occurrence of trochanteric tuberculosis and discuss its diagnosis and treatment.

CASE REPORTS

From 2002 to the present, three female patients with an average age of 67 years were treated for trochanteric bursitis tuberculosis. Epidemiological and clinical data were summarized in Table 1.

In all cases, the suspicion began with a lytic image in the greater trochanter with cystic magnetic resonance

imaging corresponding to the trochanteric bursa (Figs. 1 and 2). Serum inflammation parameters were moderately increased in all cases. Other initial laboratory studies results were within the normal range. All patients were operated with bursectomy and curettage of the trochanteric lesion. Histology revealed a necrotizing granulomatous bursitis (Fig. 3). Microbiology confirmed tuberculosis. Antituberculous chemotherapy, including isoniazid, pyrazinamide, rifampicin, and ethambutol was continued for 9 to 18 months (Table 1).

In case 3, a new surgical debridement was necessary 1 month later. The patient was kept non-weight-bearing for 3 months to prevent fracture and the clinical course has remained uneventful 3 years after starting treatment. Case 1 was lost for follow-up at the sixth year without infection recurrence and with a good functional outcome. Case 2 died 27 months later from heart failure with cured infection and a good functional result. The Ethics Committee waived approval for this study.

DISCUSSION

Tuberculous bursitis of the greater trochanter (TBGT), usually reactivation of an unnoticed primary infection, accounts for < 2% of the musculoskeletal tuberculosis.²⁾ The germ, most often *Mycobacterium tuberculosis*, usually reaches the trochanteric bursa or the greater trochanter

Received October 19, 2014; Accepted February 12, 2015

Correspondence to: Luis R. Ramos-Pascua, PhD

Department of Orthopedics, Hospital Universitario de León, Altos de Nava, s/n 24071 León, Spain

Tel: +34-987-23-4900, Fax: +34-987-23-3222

E-mail: luisramospascua@gmail.com

Copyright © 2016 by The Korean Orthopaedic Association

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Clinics in Orthopedic Surgery • pISSN 2005-291X eISSN 2005-4408

Table 1. Epidemiological and Clinical Data of the Series

Variable	Case 1	Case 2	Case 3
Age (yr)	57	86	59
Sex	Female	Female	Female
Medical history	Hypertension, meningitis, nephrolithiasis	Atrial fibrillation, uterus detachment	Osteoporosis
Medical history of tuberculosis	Hip surgery 20 years ago (unknown cause)	No	No
Side	Left	Right	Left
Symptoms	Discomfort	Pain and swelling, fistula scars	Pain and swelling
Evolution time (yr)	20	Several (unspecified)	5
Standard X-rays	Osteolysis in greater trochanter	Osteolysis in greater trochanter	Osteolysis in greater trochanter
CT	Cortical breakage and calcifications	Not performed	Not performed
Magnetic resonance imaging	Abscess	Abscess	Abscess
Scintigraphy	Uptake in greater trochanter and surrounding soft tissues	Uptake in greater trochanter and surrounding soft tissues	Uptake in greater trochanter and surrounding soft tissues
Laboratory	CRP, N; ESR, 38 mm	CRP, 5.5 (0–5 U/L); ESR, 33 mm	CRP, 19.8 (0–5 U/L); ESR, 60 mm
Plain chest radiograph and CT scan of the thorax	Pleuritis and calcified granulomas	N (CT not performed)	N (CT not performed)
Tuberculin test	Negative	Positive (28 mm)	Negative
Closed biopsy	Not performed	Yes (no diagnostic)	Yes (no diagnostic)
Surgery date	February 2003	March 2010	October 2010
Histopathology	Granulomatous bursitis	Granulomatous bursitis	Granulomatous bursitis
Microbiology	<i>Mycobacterium tuberculosis</i>	<i>Mycobacterium tuberculosis</i>	<i>Mycobacterium tuberculosis</i>
Chemotherapy	RP + INZ + PZ + ETB (9 mo)	RP + INZ + PZ (2 wk) ETB + PZ (15 mo)	RP + INZ + PZ (13 mo)
Drug tolerance	Good	RP and INZ hepatotoxicity	Good

CT: computed tomography, CRP: C-reactive protein, N: normal, ESR: erythrocyte sedimentation rate, RP: rifampicin, INZ: isoniazid, PZ: pyrazinamide, ETB: ethambutol.

bone by bloodstream from an active or cured tuberculous focus. Occasionally it arrives by direct contamination, usually from the spine or hip infection, in 50% and 15% of cases, respectively. Once in the trochanteric region, the possibility of the spread of infection from bursa to bone appears more likely, although both are often affected. Among other predisposing factors, corticosteroid injections could facilitate the spread of the disease.²⁾ Our three patients were previously treated with steroid infiltrations.

Diagnosis of TBGT is usually late, due to lack of differentiation from a local abscess or fistula,³⁾ especially in cases with history of tuberculosis infection.²⁾ TBGT should also be included in the differential diagnosis on observ-

ing cortical erosion on the greater trochanter of the femur associated with a soft tissue swelling and calcifications. Although identification of the mycobacterium is necessary for specific therapy, in some cases, due to the difficulty involved with musculoskeletal tissues samples and sensitivity of most *M. tuberculosis* to common antibiotics, chemotherapy is warranted with compatible epidemiological, clinical and histological data.⁴⁾

The treatment of TBGT involves mainly antituberculous drugs (isoniazid, rifampicin, and ethambutol), which are maintained for 6 to 18 months; and surgical debridement, though some authors have reported cures without surgery relegating it to resistant cases or bulky



Fig. 1. Case 1 (A) and case 2 (B) showing a lytic lesion in the greater trochanter.

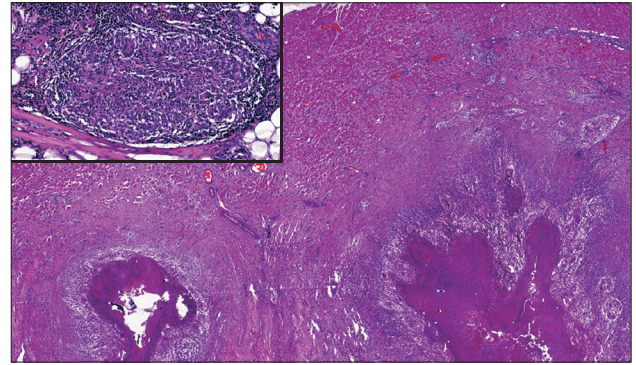


Fig. 3. Necrotic areas with granulomatous inflammatory reaction at the periphery (H&E, $\times 10$). Granuloma with Langhans cell and epithelioid cells (inset; H&E, $\times 100$).

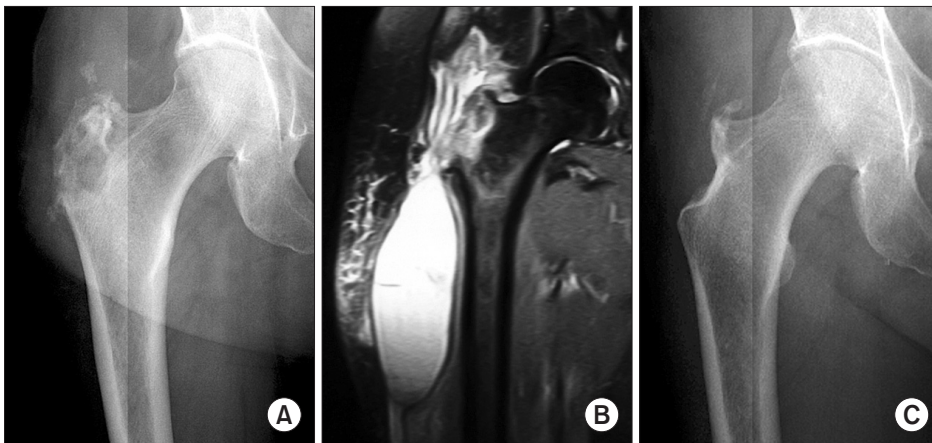


Fig. 2. Conventional radiograph (A) and T2-weighted magnetic resonance imaging scan (B) in case 3. (C) Radiograph taken 3 years after surgery.

abscesses.³⁾ We and Crespo et al.²⁾ consider surgery as essential, although it may be delayed a few weeks after starting specific medical treatment in cases of extended trochanteric involvement to reduce the risk of local spread of infection. The procedure includes bursectomy and curettage with sequestrectomy of bone lesion to reduce the risk of local recurrence,⁵⁾ which can be late.⁶⁾ Kalbermatten et

al.⁷⁾ reported that reconstruction of the bone defect in the greater trochanter or trochanterectomy is not necessary.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Koskinen S. Musculoskeletal tuberculosis: are you ready to diagnose it? *Acta Radiol.* 2011;52(6):591.
2. Crespo M, Pigrau C, Flores X, et al. Tuberculous trochanteric bursitis: report of 5 cases and literature review. *Scand J Infect Dis.* 2004;36(8):552-8.
3. Abdelmoula LC, Chaabouni L, Ben Hadj Yahia C, Montacer Kchir M, Zouari R. Tuberculosis of the greater trochanter: a report of three cases. *Joint Bone Spine.* 2005;72(5):427-9.
4. Mouhsine E, Pelet S, Wettstein M, et al. Tuberculosis of the greater trochanter: report of four cases. *Med Princ Pract.* 2006;15(5):382-6.
5. Lynch AF. Tuberculosis of the greater trochanter: a report of

- eight cases. *J Bone Joint Surg Br.* 1982;64(2):185-8.
6. Sastre S, Garcia S, Soriano A. Reactivation of ancient trochanteric tuberculosis 60 years after surgical drainage. *Rheumatology (Oxford).* 2003;42(10):1263-4.
 7. Kalbermatten DF, Kalbermatten NT, Siebenrock KA. Osteolytic lesion in the greater trochanter mimicking tumor. *Arch Orthop Trauma Surg.* 2002;122(1):53-5.