CASE REPORT

# Relapsed Hodgkin's Disease Presenting as a Right Knee Swelling

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**Summary**

A 49 year-old Indian housewife was diagnosed with Hodgkin's disease in 1995. She was given combination chemotherapy comprising Chlorambucil, Vincristine, Procarbazine and Prednisolone. Unfortunately she defaulted after two courses of chemotherapy. One year later, she developed progressive right knee swelling and pain, associated with loss of appetite, loss of weight, intermittent fever, night sweats and pruritus. The right knee swelling measured 15cm x 20cm and was warm and tender. A plain radiograph of the right knee revealed osteolytic lesions at the distal end of the right femur and the proximal ends of the right tibia and fibula, associated with gross periosteal reaction and soft tissue swelling. Apart from left cervical lymphoadenopathy, examination of other systems was unremarkable. Pelvic bone marrow biopsy was inconclusive. An open biopsy of the lower end of the right femur was consistent with Hodgkin's disease. She was given salvage combination therapy comprising Chlorambucil, Vincristine, Procarbazine, Prednisolone, Doxorubicin, Bleomycin and Vinblastine. She tolerated the treatment well and responded with significant reduction in the swelling and pain of the right knee. Unfortunately, she again defaulted treatment after 2 courses of chemotherapy. This case illustrates an unusual presentation of Hodgkin's disease in relapse.

*Key Words:* Relapsed Hodgkin's Disease, Right Knee Swelling.

## Introduction

Hodgkin's disease (HD) usually presents with nodal enlargement. Extranodal involvement is uncommon. The incidence of bone involvement by radiographic evidence in reported series of HD varies widely, ranging from 7.6% to 34%[1]. In advanced disease, bone involvement becomes increasing frequent and is found in 50-100% of reported cases [2].

Malignant infiltration of the bone frequently presents with bone pain and or swelling accompanied by constitutional symptoms such as fever, night sweats and weight loss. Neurological symptoms may occur secondary to spinal cord or nerve root compression. Diagnosis may be delayed unless there is a high index of suspicion. Bone lesions can be detected by radiological investigations such as plain radiography, bone

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scan, CT scan or magnetic resonance imaging. Definitive diagnosis may be obtained histologically by a bone biopsy. Early intervention is important as combination chemotherapy with or without radiotherapy is effective in HD. We report here an Indian lady with bone involvement of the right femur who responded to combination chemotherapy.

## Case Report

A 49-year-old Indian housewife presented with a 6-month history of left cervical swelling >10 cm in size in 1995. An excision lymph node biopsy established a diagnosis of HD. She was given combination chemotherapy with Chlorambucil 10mg od day 1-10, Vincristine 1.4mg/m$^2$ iv q24hour day 1 and 8, Procarbazine 100mg/m$^2$ od day 1-10, and Prednisolone 25mg/m$^2$ od day 1-14. Unfortunately she defaulted treatment and follow-up after two courses of chemotherapy.

In 1996, she came back to us with a history of progressive right knee swelling and pain over a period of one year. The pain was described as constant and deep-seated, being aggravated by movement. She had consulted several doctors who prescribed some treatment, but there was minimal relief of the pain. The swelling and pain finally became so bad that she could only walk a short distance with assistance. There was also loss of appetite and loss of weight. Besides, she also complained about fever, night sweats and pruritus. There was no history of trauma to the knee. She denied any history of contact with tuberculosis patient.

Physical examination revealed a lady who was in great pain. There was a 15cm x 20cm swelling over the right knee (Figure 1). The knee was held in 20 degree flexion and there was wasting of the quadriceps muscles. The swelling was warm and tender. The range of movements was restricted by pain. Two lymph nodes were palpable over the left upper cervical region measuring 3.5 x 3.0 cm and 2.0 x 2.0 cm respectively. Both were firm and non-tender. Liver and spleen were not palpable. Examination of other systems was unremarkable.

Laboratory investigations showed a haemoglobin of 9.6 g/dl, a total white cell count of 4.4 x 10$^9$/L (82% neutrophils, 10% lymphocytes, 2% eosinophils and 6% monocytes) and a platelet count of 337 x 10$^9$/L. Peripheral blood film revealed hypochromic microcytic red cells. ESR was 68 mm in the first hour. Liver profile showed only a raised serum alkaline phosphatase level (210 U/L). Renal profile was within normal limits. Chest radiograph showed bilateral hilar lymphadenopathy. A plain radiograph of the right knee revealed a large soft tissue swelling around the distal end of the right femur. There were diffuse permeative osteolytic lesions at the distal end of the right femur and the proximal ends of the right tibia and fibula, associated with gross periosteal reaction. Mantoux test was non-reactive. Ultrasound examination of the abdomen revealed an enlarged spleen and enlarged lymph nodes in the hepatoduodenal ligament and the para-aortic region. A bone marrow aspirate and trephine biopsy from the posterior superior iliac spine were performed and were found to be not diagnostic. Histopathology of tissue obtained by open biopsy of the right femur showed a mixed population of lymphoid cells with a few Reed-Sternberg (RS) cells scattered in between (Figure 2). The RS cells were positive for anti-Ki-1 (CD30).

A diagnosis of HD stage IV was made. She was then started on the COPP/ABV hybrid regime (Chlorambucil 6mg/m$^2$ od day 1-7, Vincristine 1.4mg/m$^2$ iv q24hour day 1, Procarbazine 100mg/m$^2$ od day 1-7, Prednisolone 40mg/m$^2$ od day 1-14, Doxorubicin 35mg/m$^2$ iv day 8, Bleomycin 10mg/m$^2$ iv day 8, and Vinblastine 6mg/m$^2$ iv day 8). She tolerated the chemotherapy well. There was a significant reduction in the swelling and pain of the right knee. Unfortunately, she again defaulted treatment after 2 courses of chemotherapy.

**Fig 1: Swollen right knee**

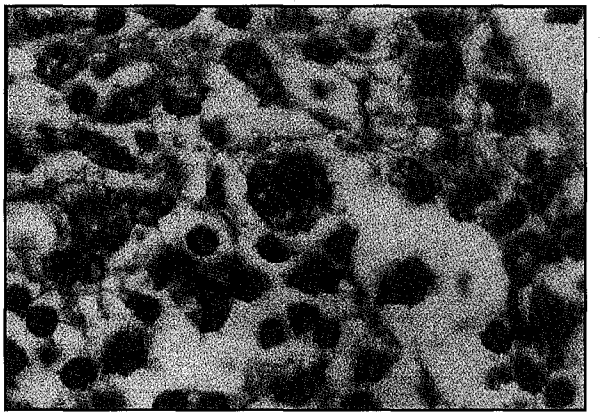

**Fig 2. : Section from the open biopsy of the right femur showing a binucleated Reed-Sternberg cell and lymphocytic infiltrates (H&E, X 1000)**

## Discussion

Bone involvement in HD predominantly affects the axial skeleton, primarily in the dorsolumbar vertebrae. The pelvis, ribs, femur, sternum, clavicle and skull are also involved in decreasing order[2]. Granger and Whitaker3 found that 3.4% of the cases involved the femur whereas another study by Newcomer et al1 noted involvement in 7% of the cases.

Clinically, bone pain is the most common presenting symptom. The nature of the pain is generally deep-seated, localized, unremitting and often nocturnal[1]. Mild analgesics are generally ineffective in relieving the pain. As bone involvement occurs in relatively advanced disease, it is often associated with constitutional symptoms. All these features were seen in this patient.

Bone involvement by HD can be demonstrated by radiography. These bony lesions may appear radiologically as lytic (75-85%), sclerotic (4-10%) or mixed (10%)[2]. Radiographic features of appendicular skeletal involvement may range from subtle foci of bony lysis to diffuse permeative infiltration involving the entire length of a long bone. About 30% of patients with bone disease have been reported to have periosteal reaction, especially those involving the vertebrae. Nevertheless, periosteal reaction also occurred in the long bones. Indeed, it may be the sole presenting feature in some cases[3].

As bone and marrow have a common blood supply, bone involvement is likely to be secondary to marrow involvement. However, the bone marrow aspirate usually shows only reactive changes as in our patient. Finding the neoplastic RS cells in the bone marrow is uncommon.

The complete remission rate in patients with advanced disease treated with combination therapy ranging from 80% to 90%, approximately 40% of these patients will subsequently relapse and may require salvage therapy[4]. Glick et al in 1998[5] noted that in patients with advanced disease treated with MOPP/ABV hybrid regime, the overall response rate was 95%, with complete responses in 79% and with an 8-year failure-free survival rate of 64% 7%. Our patient responded well to the chemotherapy and thus likely able to achieve long-term remission.

It has been suggested that bone involvement is an unfavourable prognostic factor, associated with a 5-year survival rate of 4.2% and 80% of deaths occurring in the first 3 years[3]. Other investigators reported longer disease-free survival, ranging from 4.5 to 6.5 years. However, Newcomer et al[1] found that the survival of all HD patients who received combined chemotherapy and radiotherapy was 80% as compared with 84% for those with bone involvement. Furthermore, after successful treatment, the involved bone has been noted to regain its normal radiologic appearance.

## References


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