Tubercular Abscess following Intramuscular Injections

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Introduction

In recent times, many old diseases have reappeared and tuberculosis is one of them. Tubercular abscess is usually an extension from the underlying lymphnode or bone, but occurrence at the site of intramuscular injections is rare [1,2]. Less than half a century ago there was an epidemic of inoculation tuberculosis in children following vaccination against pertussis [3]. We report two cases of post injection tubercular abscess and briefly discuss their pathogenesis.

Case 1

A female child aged one and half years presented with six weeks history of a discharging sinus in her right gluteal region. Ten weeks ago she had fever lasting about eight days for which she was given injections by the village quack in the gluteal region. Though fever subsided, she developed abscess at injection site four weeks later, which was drained but failed to heal. There was no history of prolonged illness, recent weight loss or contact with a case of tuberculosis. She was unimmunized. On examination she was febrile with grade I malnutrition and inguinal lymphadenopathy. Local examination showed a small single sinus with purulent discharge and induration in the right gluteal region (Fig. 1). Right hip, spine and abdomen were clinically normal. Erythrocyte sedimentation rate (ESR) was 27 mm in first hour and other haematological parameters were normal. Radiograph of chest, right hip and spine were normal. Pus was negative on Gram and Ziehl-Neelsen stain. Culture grew *Staphylococcus aureus* sensitive to erythromycin, gentamycin and cefotaxime. There was no response to these antibiotics given for over a week, therefore the sinus tract was excised and sent for histopathological examination which confirmed the diagnosis of tubercular infection showing tubercular granulomas with Langhans giant cells in the sinus wall. Mantoux test was positive. The patient recovered with complete wound healing after antitubercular treatment for six months.

Case 2

A 13 year old girl, a known case of Type I diabetes mellitus

on soluble insulin, presented with a recurrent abscess on the lateral aspect of right thigh of three months duration. She gave history of having taken her insulin injections at the site prior to her complaints. The abscess had failed to heal despite antibiotic therapy and surgical drainage twice prior to admission. There was no history of fever or contact with case of tuberculosis. Clinically she had mild inguinal lymphadenopathy with a single abscess on the lateral aspect of the thigh with induration of surrounding skin. Clinically and radiographically the chest, lumbosacral spine and hip were normal. Haematological and biochemical parameters were within normal range. Mantoux test was positive (24mm after 48 hours). An ultrasound scan of the right thigh suggested the possibility of psoas abscess but computed tomography (CT) scan of abdomen failed to demonstrate any collection over the psoas or inside the pelvis. The lumbosacral spine and a hip joint were normal. About 100 ml of pus was drained from this loculated abscess, which was negative on Gram staining and culture was sterile. The histopathological examination of the abscess wall showed chronic inflammatory changes with granulation tissues and focal granuloma formation indicative of tuberculosis. She was started on antitubercular drugs (2EHRZ+4HR) in view of her prolonged history, a positive Mantoux test, no healing after a week of

Fig. 1 : Single discharging sinus on the gluteal region (Case 1)

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injectable antibiotics and histopathological findings suggestive of tubercular infection. She had complete resolution of her symptoms with no recurrences on followup for about nine months.

Discussion

Tubercular abscess usually occurs by direct extension from the neighbouring joint or rarely by haematogenous or lymphatic spread from the infection in pulmonary or extrapulmonary site, though a primary focus may not be detected in every case [1]. Postinjection tubercular abscess are very rare and theoretically occur in two ways. Firstly through a primary inoculation, if the organisms are introduced by contaminated injection material or instrument, which is usually rare [4]. The second and common pathogenesis is seen in cases who have recently contacted primary infection and during this early stage of the disease a number of bacilli reach the blood stream, either directly from the initial focus or via regional lymph node and thoracic duct [4,5]. This sporadic dissemination, also termed as occult haematogenous tuberculosis, takes place for a very short time and is unlikely to continue after delayed hypersensitivity develops. During this period the main clinical manifestations is fever lasting for a few days. The bacilli are seeded at various organs and may heal completely, progress to active lesion or remain quiescent containing viable bacilli to become active again during lowered body resistance. Microhaematoma that occurs at the injection site, in patients with primary infection acts as an area of lowered resistance resulting in seedling of tubercular bacilli that get fixed at these injection sites and later progress to abscess formation if conditions are appropriate [6]. It is possible that high lactic acid content, absence of reticulo-endothelial cells and lymphatic tissue with very rich blood supply may help in localization of mycobacteria in the muscles [7]. In first case, there is a strong possibility that when the patient had fever and received injections, she was in incubation stage and disseminating bacilli resulted into seedling of bacilli at the injection site, rather than direct

inoculation which is extremely rare [4].

The speed of development of abscess depends upon the tuberculin sensitivity status of the patient. Positive status correlates with the development of local abscess, which may appear acutely in strongly positive cases (Case 2). In tuberculin negative cases, the local abscess develops slowly with involvement of regional lymphnodes (Case 1). Thus post injection tubercular abscess should be considered in the differential diagnosis of any chronic local abscess that forms at the injection site especially if there has been an interval of two to three weeks between injection and the development of abscess. Mantoux test and chest radiographs are mandatory in such cases. Attempts should be made to exclude intraabdominal collection such as psoas abscess which may track down the groin or thigh and present a similar picture. A six month short course of anti tubercular treatment is given to such biopsy proven cases.

Conflicts of Interest

None identified

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ERRATUM

1. Case Report: A Case of Nosocomial Atypical Mycobacterial Infection. MJAFI 63;201-2. For: Inroduction, Read: Introduction.
2. Journal Cover. MJAFI April 2007. For: Guest Coloum, Read: Guest Column.

The error is regretted.

Editor