

Post extraction foreign body reaction in mandibular third molar region: An uncommon presentation

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INTRODUCTION

Foreign body reaction is an end stage inflammatory response of biological tissues following implantation of any foreign material.^[1] Occasionally, hyperplastic growths of granulation tissue can arise in healing extraction sockets. These lesions represent a tissue reaction to foreign material within the socket.^[2]

CASE REPORT

A 30-year-old female patient presented with a chief complaint of intermittent pain in relation to lower left back tooth region for the past 20 days. She gave a history of mandibular left third molar tooth extraction a few weeks back. The patient developed pain in the extracted region and was treated with local application of alveologel. Intraoral examination revealed a nonhealing socket with an

exuberant soft tissue growth. The radiograph only revealed recent extraction socket in relation to the mandibular left third molar and a provisional diagnosis of post extraction granuloma was made [Figure 1]. She underwent surgical excision of the lesion, and tissue was sent for histopathological examination. Microscopically, granulation tissue exhibiting fibroblasts, numerous vascular spaces, multinucleated giant cells and an intense inflammatory cell infiltrate, predominantly neutrophils were seen. Numerous thin walled yellow-brown ring and band-like structures of varying sizes suggestive of foreign bodies were noted [Figures 2 and 3]. These structures appeared refractile under polarizing light [Figure 4 and 5]. Extravasated red blood cells, fibrin and microbial colonies were also seen [Figure 6].



Figure 1: Radiograph shows recently extracted mandibular left third molar tooth outline with no other relevant findings

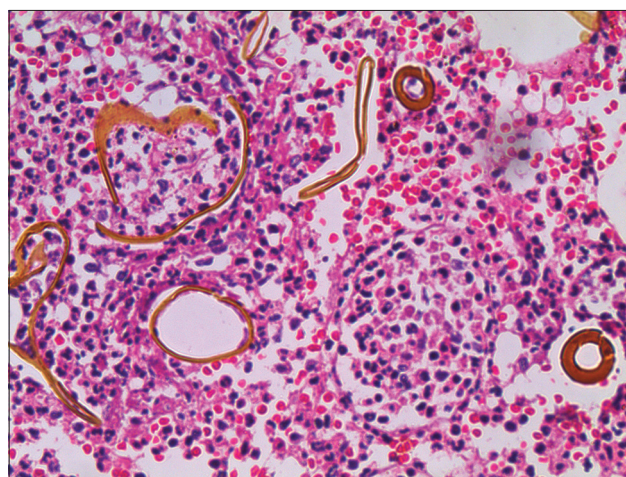


Figure 2: Ring and band like foreign bodies with mixed inflammatory cell reaction (H&E, ×40)

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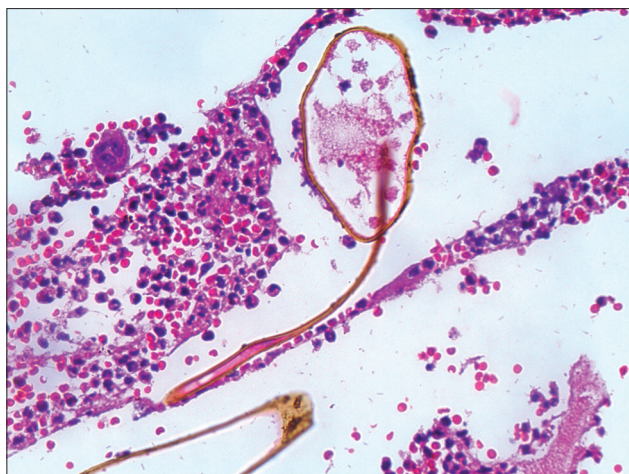


Figure 3: Presence of multinucleated giant cell seen associated with foreign body (H&E, x40)

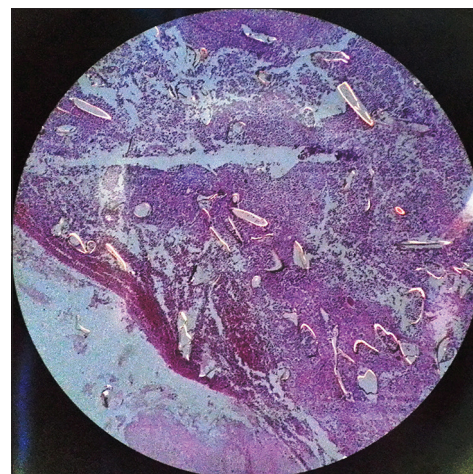


Figure 4: Multiple refractile structures seen under polarizer (x10)

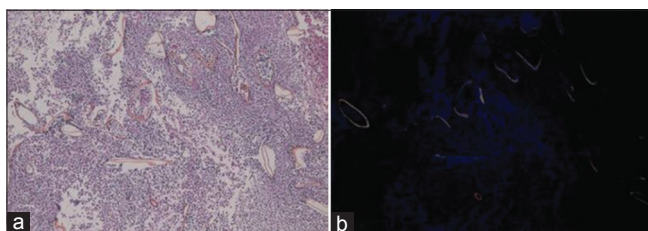


Figure 5: Section showing numerous thin walled structures of varying sizes (a); same field appears birefringent under polarized light (b) (x10)

Differential diagnosis

Post extraction granuloma

This is an uncommon complication which occurs 4-5 days after extraction of tooth as a result of the presence of foreign body within the extracted tooth socket. The common foreign materials encountered are amalgam remnants, bony fragments, small tooth fragments, calculus, etc. Foreign bodies irritate the area so that post extraction healing ceases and there is suppuration of wound. Histopathologically, the specimen usually shows macrophages, lymphocytes, plasma cells and less frequently mast cells and eosinophils along with the presence of foreign bodies.^[1]

Myospherulosis

Placement of topical antibiotics in a petrolatum base into a surgical site may occasionally result in a unique foreign body reaction known as myospherulosis. Histopathologically, it exhibits multiple cyst-like spaces containing numerous brown to black-staining spherules. The spherules represent extravasated erythrocytes that have been altered by medication and degradation of hemoglobin.^[2]

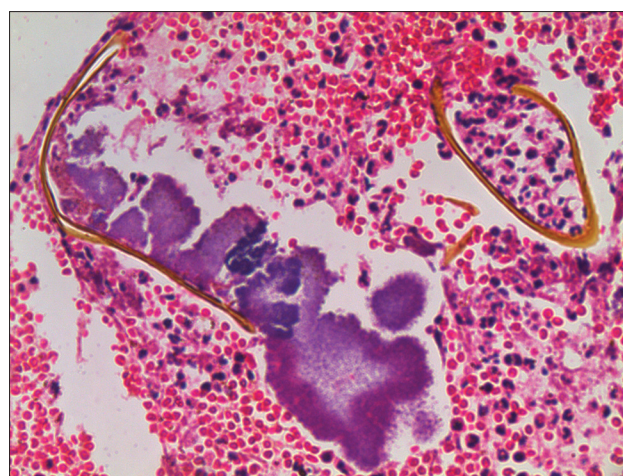


Figure 6: Microbial colonies, foreign bodies, polymorphonuclear leukocytes and red blood cells (H&E, x40)

Pulse granuloma

This is caused due to foreign body reaction to vegetable matter, particularly the cellulose moiety of plant foods. Histopathologically, it consists of a chronic inflammatory cell infiltrate and collection of foreign body type giant cells associated with ovoid, fibrillary or amorphous hyaline masses.^[3]

Final diagnosis

Foreign body reaction.

The other possible foreign materials which may be encountered within the extraction socket are cotton fibers, suture materials, gauze pieces and sponge particles.^[4] The present case did not show the classic presentation of any of the above-mentioned histopathological appearances. The presence of unique appearing histological structures, along with acute inflammatory cells suggests a reaction to a newer foreign material.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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