Organic Foreign Body Reaction

Report of Two Cases of Thorn-Induced ‘Granuloma’ and Review of Literature

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Abstract. Following the entry, the organic foreign material (thorns, twigs, wood fragments, etc.) may become embedded in different structures. Depending upon its proximity to the bone(s), it may or may not result in certain osseous changes. There is a paucity of adequate information about different clinical and pathologic conditions related to organic foreign bodies. This was the stimulus of the present communication. We have reported two additional thorn-induced bony lesions along with reviewing 44 other reported cases. Among these, only 11 cases were reported to have positive radiographic findings (eight thorn-induced, two wood fragment-related, and one due to a twig.) Because of their clinical, laboratory, and pathologic similarity to other synovitides, three cases of tenosynovitis and 16 cases of infective and noninfective synovitis are among the group under review. Geographic distribution of thorns so far reported is illustrated and the pathophysiologic possibilities are discussed.

Key words: Osteomyelitis - Synovitis - Arthritis - Foreign body granuloma - Pseudotumors - Thorns.

Case Histories

Case 1

H.F. is an eight-year-old Mexican-American boy who was referred to Driscoll Foundation Children’s Hospital because of a soft tissue ‘lump’ in his right palm with some tenderness. Approximately two months prior to his admission, he had stuck a mesquite thorn in his palm. This did not bother him until several weeks prior to his admission when he developed a ‘lump’ in his palm with slight tenderness. A magnified radiograph of the right hand obtained nine days prior to his admission showed a lytic lesion of the proximal fifth metacarpal bone without reactive bone formation. There was also mild periosteal reaction at the lateral aspect of the bone (Fig. 1). In view of positive clinical history and radiologic appearance, the diagnosis of thorn-induced ‘granuloma’ was strongly suggested. On physical examination upon his admission a tender ‘lump’ was palpable in the right palm at the distal end of Guyon’s canal and hypothenar eminence. The patient’s laboratory data were noncontributory. At surgery the ‘granuloma’ was sharply dissected and excised, along with a one-half inch thorn in the palm. Microscopic examination of the specimen showed proliferation of fibrohistiocytic elements. A great deal of acute inflammation was present approaching abscess formation. Foreign body giant cells were identified. The overall appearance was similar to the reaction seen in some plant foreign body tissue, such as a cactus spine. The patient had received antibiotics prior to surgery. No positive culture for any organism was stated in the record. On follow-up examinations he was fully recovered.

Case 2

R.M. is a 6½-year-old Mexican-American boy who punctured his right great toe with a bougainvillea thorn four weeks prior to admission to Driscoll Foundation Children’s Hospital. The injury was followed by two days of swelling which resolved spontaneously. The swelling reappeared two weeks later when he was seen by his family physician and was treated with antibiotic (Keflex). One week prior to his admission a radiograph was obtained which showed a pure lytic lesion of the distal aspect of the proximal phalanx of the great toe, extending to the articular surface with some periarticular soft tissue swelling (Fig. 2). No periosteal reaction was noticed. On physical examination the toe was swollen.
Fig. 1. *Thorn-induced granuloma.* Lytic lesion of the proximal portion of the fifth metacarpal, associated with mild and benign periosteal reaction at the lateral aspect of the bone.

Fig. 2. *Thorn-induced granuloma.* Pure intraosseous lytic lesion of the distal portion of the proximal phalanx of the right great toe, extending to the articular surface with some periarticular soft tissue swelling.

Fig. 3. The modern distribution of *Prosopis velutina,* the velvet mesquite and its close relative, *Prosopis glandulosa,* the honey mesquite, in the southwestern United States. Reprinted, with permission, from *Mesquite: its biology in two desert scrub ecosystems,* B.B. Simpson, Ed., Stroudsburg, Pa: Dowden, Hutchinson & Ross.

Fig. 4. The gray zone represents the range of mesquite distribution while the black areas represent heavy infestation in the southwestern United States. The location of Corpus Christi is identified by the arrow. Reprinted, with permission, from *Mesquite: its biology in two desert scrub ecosystems,* B.B. Simpson, Ed., Stroudsburg, Pa: Dowden, Hutchinson & Ross.

but not red or hot. White blood count was 6700 with a normal differential. The patient had a curettage of his lesion during surgery when a small piece of thorn was recovered. Cultures were not obtained. There were recent and chronic inflammation seen in the pathologic specimen along with foreign body giant cell reaction. Five months after surgery, the patient was asymptomatic.

**Mesquite [9]**

The spiny plants of *Prosopis* are among the most common plants along washes and canyons of the New World deserts, as well as those of northern Africa.