A Concealed Glomus Tumor Associated with a Bone Infarction in the Finger

A. Karev
Hand Surgery Unit, Rambam Medical Center, Technion – Israel Institute of Technology, Haifa, Israel

Summary. A simultaneous finding of a bone infarction with a glomus tumor in the finger is presented. The bone infarction – probably symptomless – concealed an unnoticed glomus tumor.

Key words: Glomus tumor – Bone infarction – Finger – Resection

Bone infarcts occur in association with trauma, decompression sickness (Caisson disease), sickle-cell anaemia, prolonged cortisone therapy and chronic alcohol abuse. A few bone infarcts have no apparent cause, and may occur in various bones [1–3].

Clinical Features

Bone infarcts may be associated with local pain, and may be mistaken for calcifying cartilaginous neoplasma, cysts or even osteoid osteoma [2]. Common sites are beneath articular cartilage of epiphyses supplied by an endarterial system, such as the femoral head, femoral condyles, body of talus, head of humerus and carpal scaphoid. Occasionally they may occur in metaphyses of long bones like tibia, humerus and femur [1]. Radiologically there is an irregular area of density, sometimes cyst-like, with a surrounding normal trabecular bone. Occasionally there is a thin reactive rim about the infarct. Tomography shows a central dense infarct, and a CT scan in cross section shows homogeneous density. On isotope scans they appear “colder” than normal bone with little OR no uptake. Bone infarcts evoke no neovascular response [3] at surgery there is a dense white, chalky hard area of heavily trabeculated bone firmly embedded within normal appearing cancellous bone. Pathological findings show empty lacunae in the necrotic bone without repair by creeping substitution.

Glomus Tumor

The Glomus tumor is a benign vascular tumor often found in the nailbeds of fingers and toes, although it may be found anywhere along neurovascular structures in the extremities. Clinically it presents with paroxysms of intense stabbing pain that occur intermittently, not unlike those associated with osteoid osteoma, not relieved by salicylate analgesics. The pain may be triggered by pressure or minor trauma. Sometimes in the nailbed the tumor is seen as a small bluish nodule, blanching on pressure. It may be seen on X-ray, only when large enough to cause erosion of the underlying bone.

Surgical findings show a well encapsulated mass with a mature fibrous capsule, without reaction in the adjacent tissue. The tumor may be shelled out. Histologically it is easy to diagnose: Vascular channels (capillaries) surrounded by layers of polygonal cells of endothelial derivation, termed pericytes. The pericytes are normally found in pressure-sensitive areas, just external to capillary walls and furnish the means by which the capillary bed responds to changes in temperature and pressure. Between the capillaries are fine-non-melanated nerve fibers, presumed to be responsible to the severe pain caused by engorgement of the vascular component, confined within an unyielding fibrous capsule.

A case of a concealed glomus tumor, associated with roentgenographic, surgical and pathological findings of a bone infarct in the finger will be described.
Case Report

A forty-four year old female had for many years severe paroxysms of pain in her left middle finger. The pain was not nocturnal, nor influenced by change of temperature, and it did react to analgesics, with no preference to salicylates. On examination the left middle finger showed no clinical findings: no swelling, no bluish discoloration under the nailbed, and no tenderness to pressure. X-ray (Fig. 1) showed bone density at the base of the distal phalanx, this was diagnosed as a bone infarct. No CT scan or isotope scan were taken. Under metacarpal block anaesthesia the lesion was excised, and found to be a dense white, chalky hard mass 2 × 2 mm size, firmly embedded in the phalanx histologically there were fragments of necrotic bone, corresponding to bone infarction. Postoperatively (Fig. 2), healing of the bone was evident within two months (Fig. 3), but there was no relief of symptoms: the pain remained, and due to the fact that on a control X-ray it was evident that the bone lesion was completely excised, a concealed glomus tumor was suspected. Re-exploration by means of re-

Fig. 1. Bone infarction in the base of the distal phalanx of the middle finger

Fig. 2. The bone defect after the excision of the infarction

Fig. 3. Complete healing of the bone two months post operatively

Fig. 4. The glomus tumor (HE × 250)