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LETTER TO THE EDITOR

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"Callus caps"—An intriguing footprints of intramedullary nails

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Dear editor,

The intramedullary nailing has revolutionized the care of diaphyseal long bone fractures by providing an excellent internal splinting and early clinical recovery. The long-duration external splinting, braces, plaster, and frames are rarely seen nowadays so are the complications associated with it. The intramedullary nailing has its own set of complications but overall it is one of the best methods to treat appropriate fractures.

Usually, the nailing is done in a closed manner with antegrade entry point in case of femur and the nail is inserted through pyriform fossa or greater trochanter in the proximal femur. The same location is an attachment site for various muscles in that region like short external rotators, piriformis, and gluteal medius among others. Entry point created by pointed metallic instruments followed by the use of reamers can partially damage the surrounding muscles if not significantly [1]. The reaming is not exclusively linked to the formation of heterotopic bone and the presence of which usually have no significant impact on outcome or morbidity. Sometimes, the heterotopic bone formation in the tract of insertion may be noted along with that over the protruding proximal implant end. This heterotopic bone is usually not clearly appreciated in the radiographs in the presence of in situ implant. In cases where removal of the nail has taken place, post-operative radiographs reveal calcific foci or mass over the previous nail end and sometimes, the shape conforms to that of nail end in crescent shape fashion (Fig. 1). These are termed "callus caps" or "cap callus." Gerhard Kuntscher, the man who revolutionized the development and practice of intramedullary nailing, has also made note of this strange lesions and linked it to prominent proximal nail end [2]. There has been an attempt to classify these ossifications and it is also noted that the formation of these is not affected by the volume of lavage and irrigation of nailing tract during operation [3]. Along with it, patient-related fractures like head injury and poly-trauma were also associated with increased incidence [4]. Though most of these do not need any treatment, some reports have described that the large size of heterotopic bone required excision [5].

There is a lot more to know about etiopathogenesis of heterotopic ossification and its ideal management and only well-directed future research may give clear insights about. These callus caps are queer lesions that an orthopedist and radiologist should be acquainted with.

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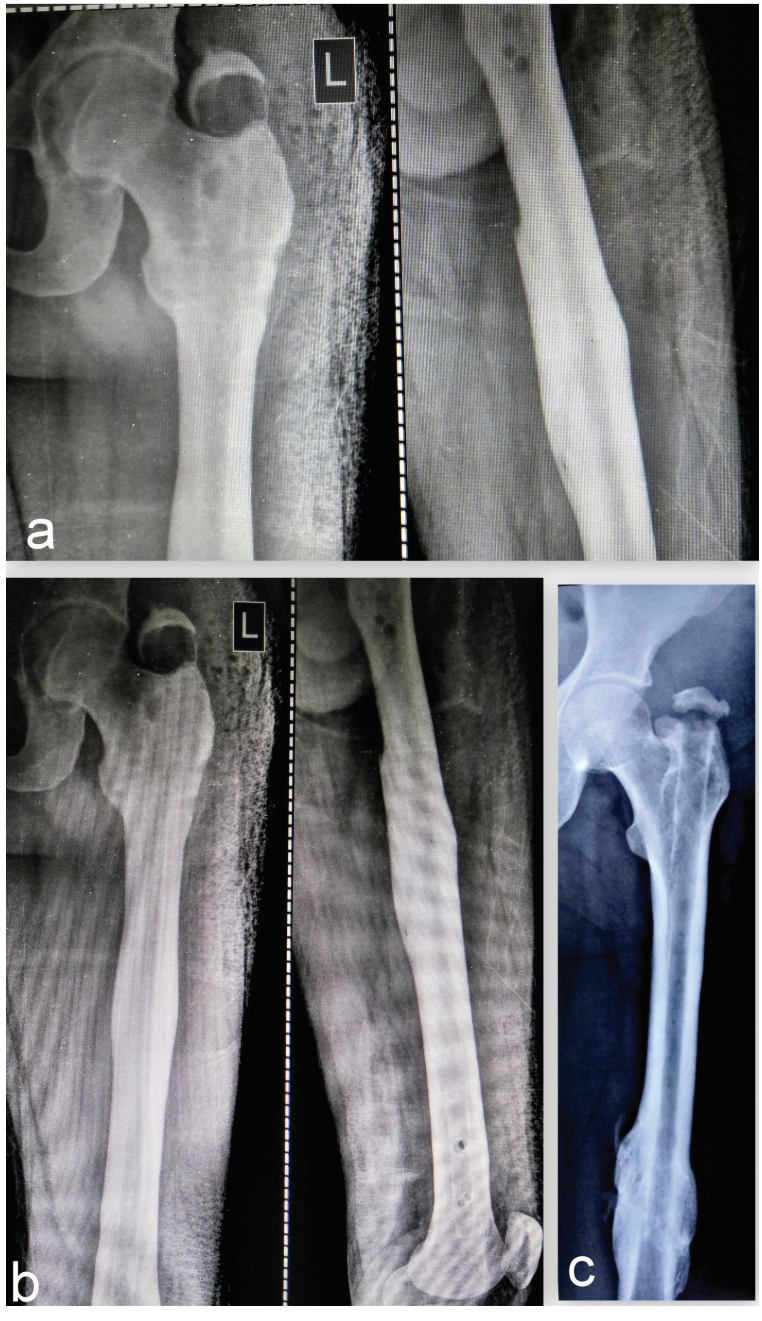


Figure 1. Radiograph showing discrete crescent-shaped heterotopic bone or “cap callus” in the proximal femur (a). The full-length view showing unobliterated holes in the distal femur corresponding to distal screw site of the extracted intramedullary nail (b). Another “cap callus” seen over proximal femur (c) along with the nail tract appreciated in the proximal femur and united bone in the diaphysis.