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Masquelet technique current concepts & advances

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Background: Open fractures are a difficult entity, often complicated by infection and non-union. Bone loss in such fractures adds to the complexity. Conventional techniques of bone defect management are mainly directed toward fracture union but not against preventing infection or joint stiffness. In this case series, we evaluated Masquelet's technique for the management of open fractures with bone loss.

Materials and Methods: One hundred fifty-six open fractures with bone defects, which presented within 3 days of trauma, were planned for treatment by Masquelet's technique. Follow-up ranged from 12 to 24 months. Results: Average length of bone defect was 3cm. The radiological union was obtained at a mean of 240 days since the first stage of surgery. The time for the union was not related to the size of the defect. Union was faster in the metaphyseal region (225 ± 38 days) as compared to diaphysis (260 ± 58.6 days). No patient had residual infection after stage 1. All the patients were able to mobilize with full weight bearing after radiological union with a satisfactory range of motion of adjacent joints.

Conclusion: This technique can be routinely applied in compound fractures with the bone loss with good results. Chances of infection are reduced using an antibiotic cement spacer as an adjunct to thorough debridement. Induced biomem-

brane revascularizes the graft. The union can be expected in most cases; however, the long time to union is a limitation. The technique is cost-effective and does not require special training or instrumentation. Although it is a two-stage surgery, the requirement of multiple surgeries, as may be needed in conventional methods, is avoided.

Recent Publications

1. Engineering functionally graded tissue engineering scaffolds J Mech Behav Biomed Mater (2008)
2. Endothelial pattern formation in hybrid constructs of additive manufactured porous rigid scaffolds and cell-laden hydrogels for orthopedic applications J Mech Behav Biomed Mater
3. Engineering a vascularized collagen- β -tricalcium phosphate graft using an electrochemical approach Acta Biomaterialia, Volume 11, 2015, pp. 449-458

Biography

Srinivas Yeggana is a well-known senior orthopedic surgeon with extensive experience in the field. He is the first person from South India to be awarded the prestigious British IOA Fellowship in Joint Replacement and Revision Joint Replacement. Computer-aided navigation arthroplasty and arthroscopic surgery in the United Kingdom. He was trained and worked in the best orthopedic hospitals in India and the United Kingdom (UK).

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