Research Paper

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A CASE OF ENDERS NAILING HUMERUS IN CARDIAC RISK

Medical Science

KEYWORDS : enders nailing, humerus, low ejection fraction.

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ABSTRACT

Humerus fractures are one of the commonly occurring long bone fractures. Patients sustaining unstable fracture patterns are taken up for internal fixation requiring anaethesia and surgical procedure requiring reaming of the bone. These techniques need surgical fitness of the patients to undergo these surgeries which are associated with intra operative complications. These fractures in poor cardiac risk patients add to the co morbid conditions. Techniques requiring a minimal procedure and less meddling with the biology of the fracture will minimize the risks even in co morbid conditions like low ejection fraction.

INTRODUCTION

Fracture shaft of the humerus is one of the common long bone fractures which occurs in a variety of traumatic conditions. The fracture pattern with oblique fracture lines and spiral fractures are difficult to be stabilized with methods other than internal fixation.

Various internal fixation methods used for internal fixation of fracture shaft of humerus are interlocking nail, Locking compression plate , enders nailing,or Dynamic compression plate. All these techniques will give stability to the fracture , but they require other requisites like the fitness of the patients to under go surgery.

Interlocking nail requires considerable reaming to get stable fixation and not suitable for fractures with multiple fragments with butterfly fragments requiring techniques when fragments are blocking the medullary canal.

Dynamic compression plate and Locking compression plate fixation requires open reduction requiring considerable surgical time and prolonged anaethesia. Open reduction techniques are not suitable for segmental fractures and fragments with small butterfly fragments which may loose their vascularity and are often augmented with bone graft. Adding another procedure and in patients with unstable fracture patterns a fixation method requiring two or more procedures will add to the co morbid condiotns in patients with poor risk for surgery.

We are reporting a case of fracture shaft of humerus in a patient with cardiac risk.

CASE REPORT: A 38 year old lady presented to the Casualty with pain, swelling, deformity of the right arm due to road traffic accident. On examination patient appeared stable with no life threatening injuries. After securing an iv line , the evaluation has been proceeded, which revealed tenderness, painful abnormal movements at the middle third of the right arm , crepitus with limitation of movements at the right elbow joint. Routine investigations are done along with radiographs which revealed a spiral fracture of the right humerus at the middle third with unstable fracture.

Fig.1 Pre operative X ray

The patient has been given a J slab for temporary immobilization and taken up for further evaluation. This evaluation revealed left ventricular dysfunction with moderate ejection fraction.

The patient has been planned for an internal fixation of the fracture with minimal impact on fracture biology which requires minimal anaethesia time and no cardiac complication intra operatively.

The patient is treated with internal fixation of the fracture with enders nail with minimal dissection with retrograde nail insertion,under Brachial block.

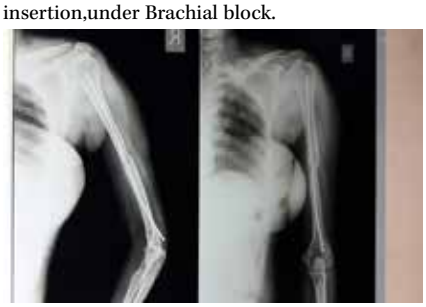

Figure 2: Post Operative X ray

Patient has not developed any of the intra operative complications and the surgical wounds have healed very well.

Fig 3 Surgical wounds healed.

The patient has been discharged on the tenth post operative day with an advice for further follow up with cardiologist. She has under gone physiotherapy with pendulum movements followed by ROM exercises . With in three months post operatively the fracture showed good consolidation.

Fig. 4 : X ray showing united facture

CONCLUSIONS

Fractures which are not stable by their pattern require internal fixation for which a patient need to be evaluated further when there are co morbid conditions. The surgical technique planned should take into consideration of what can aggravate or create a co morbid condition during the surgery . various surgical techniques for fixation of fracture shaft of humerus involve reaming of the bone, open reduction of the fracture requiring considerable anaethesia time. Enders nailing requires minimal dissection, minimal anaesthesia time, and no reaming which are required while treating a patient with internal fixation in cardiac risk.

DISCUSSION:

Fractures of the shaft of the humerus need to stabilized in all unstable fractures to avoid mal alignment. The fractre fixation should not necesitate another fixation or procedure to address moble fractures with gaps even after preliminary fixation.The retrograde nailing of the humerus gives stability that is required in unstable fractures which undergo various loading stresses subsequently[1].

Endres nailing can be done without distraction or shortening at the fracture site. Locking Enders rods for long bone unstable fractures is an excellent option to prevent shortening and resulted in no additional complications, no added surgical time, or no increased blood loss. When the fractures are unstable enders nail gives required stability at the fracture site and the minimal interference at the fracture site is an added advantage[2].

The choice of enders nail is not inferior to other usual techniques and implants when used for mid shaft fractures.The stiffness of the enders nail is equal to the other devices used to stabilize the fractures in the mid shaft[3].

Interlocking nail requires accurate entry points,and locking techniques to avoid difficulty in inserting and locking the nail. The technical errors and complications intra operatively are more in fixation with interlocking nails. In the backdrop of co morbid conditions interlocking nail requires technical perfection and at times causes much splintering of the bone and other intra operative difficulties. Reaming is not necessary to get stable reduction[4].

Intra medullary nailing with Technical errors, such as distraction, longer nail and additional fractures have affected time to union and resulted in chronic shoulder pain. secondary surgeries were needed to address these problems. When first generation nails are used, the intra-operative complication related risk increases 1.58 times, and the postoperative complication related risk is 1.67 times higher compared to second generation nails. According to Constant-Murley score excellent and very good functional results were achieved in 93 (83.78%) patients. While reaming did not influence the clinical results for both nail generations, overall better results were achieved with second generation nails. Postoperative shoulder pain has been registered in few patients [5].

Each technique is having , technique specific complications. Such complications which are expected in co morbid conditions can be avoided by opting for simple techniques .

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