ORIGINAL RESEARCH PAPER
Volume-9 | Issue-2 | February-2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

MINIMALLY INVASIVE PLATE OSTEOSYNTHESIS WITH LOCKING COMPRESSION PLATE IN FRACTURE SHAFT OF HUMERUS- TECHNIQUE AND CASE REPORT

Orthopaedics

Dr. Joseph John

Dr. Bijith balan* *Corresponding Author

Dr. Raj sankar

ABSTRACT

A 27year old male patient came with right arm pain and deformity. Radiograph showed fracture shaft of humerus.
He underwent MIPO procedure. Follow up were done in periodic interval. He has acceptable shoulder movements at 4 months following surgerical fixation.

KEYWORDS

Hemoglobin, Intravenous ferric carboxymaltose, Intravenous iron sucrose, Serum ferritin.

INTRODUCTION:

A fracture of the humeral shaft is a common event, accounting to 3% of all fractures[1] . Most will heal with appropriate conservative care, although a small number will require surgery for optimal outcome. Surgical management is required in special circumstances such as polytrauma, open or bilateral fractures, floating elbow and obesity[2]. Open reduction and internal fixation (ORIF) with plates and screws continues to be considered the gold standard for surgical treatment given its lower complication rate[3,4] and shorter time to union [5]over intramedullary nailing.

Due to concerns about soft tissue dissection required for ORIF, a less invasive technique that allows indirect reduction and percutaneous plating of the anterior humerus has been developed known as minimally invasive percutaneous plate osteosynthesis (MIPPO). Early reports have shown excellent healing rates and alignment, and infrequent complications[6-8].

Case Report: A 27 year old gentlemen presented to our emergency clinic with pain and deformity of right arm after RTA. Clinical evaluation revealed his neurovascular status to be intact. Radiograph revealed transverse fracture shaft of humerus (Figure1).

He underwent MIPO (minimally invasive plate osteosynthesis) on the next day. His post operative radiographs showed a satisfactory fixation (Figure 2). He was followed up regularly. Six weeks following surgery he was started on physiotherapy and was assessed periodically. At 12 weeks his radiograph showed good signs of union (Figure3). At the end of 6 months he had acceptable range of painless range of motion (Figure 4,5,6,7).

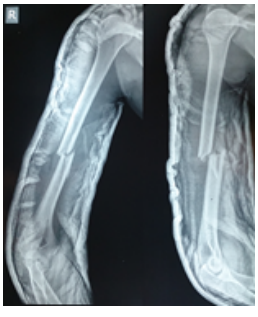

Figure 1

Intra Operative images

Figure 2

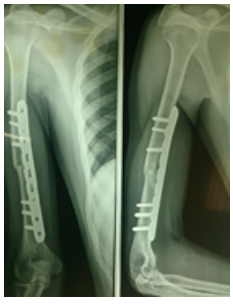

Figure 3

Figure 4 shoulder Abduction

Figure 5 Shoulder Extension

Figure 6 Shoulder Internal rotation

Figure 7 Shoulder External rotation

DISCUSSION :

Surgical options for treatment of humeral shaft fracture include open reduction and internal fixation with dynamic compression plate, intramedullary nail osteosynthesis and minimally invasive bridge plate fixation. Open reduction and rigid internal fixation with absolute stability using dynamic compression plates is today's standard and is the more common surgical option for treatment of this fractures.[9,10,11]

Current concepts of internal fixation of shaft fractures of the long bones advocate relative stabilisation techniques with no harm to the fracture zone[12]. MIPPO has been reported as safe and effective method and is known to have biomechanical advantage for comminuted fractures.[8]

REFERENCES:

1. S.TerryCanale ,James H.Beaty.Campbell's Operative Orthopaedics.11th ed.MOSBY:2007
2. Green A, Reid JP, DuWayne AC (2005) Fractures of the humerus.In: Baumgaertner MR, Tornetta P (eds) Orthopeadic knowledgeupdate: trauma 3. American Academy of Orthopaedic Surgeons,Rosemont, IL, pp 163–180
3. Bhandari M, Devereaux PJ, McKee MD, Schemitsch EH (2006)Compression plating versus intramedullary nailing of humeralshaft fractures—a meta-analysis. ActaOrthop 77:279–284
4. McCormack RG, Brien D, Buckley RE, McKee MD, Powell J,Schemitsch EH (2000) Fixation of fractures of the shaft of thehumerus by dynamic compression plate or intramedullary nail.A prospective, randomised trial. J Bone Joint Surg Br 82:336–339
5. Chapman JR, Henley MB, Agel J, Benca PJ (2000) Randomizedprospective study of humeral shaft fracture fixation: intramedullarynails versus plates. J Orthop Trauma 14:162-166
6. Apivatthakakul T, Arpornchayanon O, Bavornratanavech S (2005)Minimally invasive plate osteosynthesis (MIPO) of the humeralshaft fracture. Is it possible? A cadaveric study and preliminaryreport. Injury 36:530–538
7. An Z, Zeng B, He X, Chen Q, Hu S (2009) Plating osteosynthesisof mid-distal humeral shaft fractures: minimally invasive versusconventional open reduction technique. IntOrthop. doi:10.1007/s00264-009-0753-x
8. Jiang R, Luo CF, Zeng BF, Mei GH (2007) Minimally invasiveplating for complex humeral shaft fractures. Arch Orthop TraumaSurg 127:531–535
9. Bell MJ, Beauchamp CG, Kellam JK, McMurty RY: The results of plating humeral shaft fractures in patients with multiple injuries: the Sunnybrook experience. J Bone Joint Surg Br 1985, 67:293-296.
10. Dabezies EJ, Banta CJ, Murphy CP, d'Ambrosia RD: Plate fixation of the humeral shaft for acute fractures with and without radial nerve injuries. J Orthop Trauma 1992, 6:10-13.
11. Heim D, Herkert F, Hess P, Regazzoni P: Surgical treatment of humeral shaft fractures: the Basel experience. J Quant Spectrosc Radiat Transf 1993, 35:226-232.
12. Livani B, Belangero WD: Bridging plate osteosynthesis of humeral shaft fractures. Injury 2004, 35:587-595.