Humerus Plating
Why it is the best

Kakwani
Indications for internal fixation

- Multiply injured patients,
- Open fractures,
- Patients with spinal cord injury (high quadriplegia) or brachial plexus injuries,
- Fractures with associated neurovascular injuries
- Radial nerve palsy after closed reduction
- Floating elbows, and
- Cases in which a satisfactory reduction cannot be maintained by closed methods
Humeral shaft fractures

Absolute stability

Relative stability
- Broad 4.5 large fragment plate
- Small bone individuals
  - Narrow large fragment plate
  - Small fragment plate 3.5
Plating

- Open reduction with plate fixation usually ensures a high likelihood of anatomic reduction
- Radial nerve exploration
- Patients with narrow medullary canal

Plating – Disadvantages

- Extensive dissection with greater disruption of the soft tissue envelope,
- Risk of infection,
- Potential injury to the radial nerve (5%),
- Poor fixation in osteoporotic bone,
- The possible need for plate removal at a later date.

Raghavendra S, Bhalodiya HP. Internal fixation of fractures of the shaft of the humerus by dynamic compression plate or intramedullary nail: A prospective study. Indian J Orthop 2007;41:214-8

Functional results
(Rodriguez-Merchan criteria)

No Difference in

ASES scores
Visual analogue pain score
Time taken to return to normal activity

## Complications

<table>
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<tr>
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<th>Plating</th>
<th>Nailing</th>
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<td>Rate</td>
<td>17%</td>
<td>50%</td>
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Postop shoulder pain & Shoulder stiffness


Raghavendra S, Bhalodiya HP. Internal fixation of fractures of the shaft of the humerus by dynamic compression plate or intramedullary nail: A prospective study. Indian J Orthop 2007;41:214-8
Nailing – Disadvantages

The possibility of impingement from proximally prominent hardware
Antegrade nailing can affect fracture healing by distracting the fracture
7-15% Risk of further fracture comminution during reaming or nail insertion
Neurovascular injury at interlocking sites


The shortening of the affected arm by 1.5–4 cm was noted in 33% cases with IMN fixation.

The difference in risk of reoperation with plates and intramedullary nails was 10%.

Every 10 patients treated with plates, 1 reoperation might be prevented (i.e. NNT = 10)
The difference in risk of reoperation with plates and intramedullary nails (18%) for every 6 patients treated with plates, 1 shoulder impingement would be prevented (i.e. NNT = 6)

Plate fixation did not incur greater risks of 
Nonunion, 
Infection, 
Radial nerve palsy

RCT

References

Questions???