Enhanced Treatment: Examining the clinical and cost implication of combined home care and day-case ankle fracture fixation

AOFAS 2017
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Nothing to Disclose

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No potential conflicts with this presentation
Introduction

- Ankle fracture fixation has commonly been undertaken as an inpatient due to swelling:
  - Leading to delays in surgery which may not always be conducted on the next available operating list
- Over the last 5 years:
  - Many trauma cases are being managed semi-electively
  - Many of these within the day case department giving patients more choice in their treatment
Aims

- We conducted a study looking at the impact of combining
  - an home therapy ankle fracture pathway
  - and day case surgery

Looking specifically on the length of stay and safety of patients requiring surgical fixation.
Methods

- Patients were assessed in two periods from Jan 2015 to Dec 2016
- All patients were placed in a plaster back slab in casualty with the ankle reduced and limb care advice.
- One group of patients was assessed for home therapy and day case surgery as per our inclusion criteria in Table 1.
- They were then discharged home on crutches to await surgery on a pre-determined day case list.
- The other group were given standard in-patient treatment.

Table 1 - Day Surgery Inclusion Criteria

1) Medically safe for discharge
2) Closed ankle fracture and Neurovascular status intact
3) Reduced satisfactorily in back slab
4) Able to mobilise safely non-weight bearing
5) Independent in activities of daily living
6) Telephone at home
7) Within 1 hour drive of hospital
8) Sufficient provisions of food and drink at home
9) Compliant with ice and elevation instructions
10) Absence of previous thromboembolism
Methods: Pathway

Figure 1. Treatment pathway for ankle fractures requiring surgical fixation

Ankle fracture
Requiring surgical fixation

Operation possible within 24 hours?

Yes

Admitted as inpatient and operated on in the trauma theatre

No

Meets day surgery inclusion criteria?

Yes

Allocated day surgery date
Discharged home with analgesia, thromboembolism prophylaxis and crutches

Approximately 6 days later

No

Admitted as inpatient for elevation, analgesia and daily review until operation in the trauma theatre

Operation in the day surgery unit
Discharged same day if medically fit for discharge
143-patients were identified

All operated fractures were examined who were suitable for both day case and in-patient care.

We performed a prospective audit of the cases undertaken and analysis of the number of cases; complications and the cost benefits

<table>
<thead>
<tr>
<th>Type of fracture</th>
<th>Day surgery (Group 1)</th>
<th>Inpatient (Group 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uni-malleolar</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Bi-malleolar</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>Tri-malleolar</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Table - Summary of fracture type in both group of patients
Results

- We compared the two cohorts of patients with Weber B fractures whom choose surgical fixation.
  - 21 patients were identified for home-therapy & day-case
  - 32 patients for in patient management

- Time-to-surgery for in-patient management was 2.38 (1-16) days; length of stay was 4.94 days (2-31).

- Home-care & day-case time to surgery was 5.8 days (2-7). No patient was admitted following surgery.

- One DVT was seen in the in-patient group no-wound-complications or failures of fixation were reported.
A mean 1.5hrs of operating time was required (59.3 min tourniquet time) and day-case-surgery is £228 per patient cheaper than in-patient surgery.

Cost efficiency based on 4.94 bed-day-improvement is 158 bed-days a year or a cost-saving of £1,235 per patient.

<table>
<thead>
<tr>
<th>DSU margin</th>
<th>£2295</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient margin</td>
<td>£277</td>
</tr>
<tr>
<td>Real margin per case (A)</td>
<td>£2018</td>
</tr>
</tbody>
</table>

Table 3 – DSU and inpatient margins as per 2016 costing from the NHS HRG Coding system showing the financial benefits of DSU surgery vs. inpatient theatre cost. The real margin represents the cost saving or profit to the health provider.
We believe home-care and day-case ankle fracture surgery is cost effective in the appropriately selected ankle fracture patients.

In our health system there is little difference in waiting times and a pre planned surgical episode can lead to patient flexibility.

The total potential saving per patient to the health care provider could be as much as £1,500 per patient.

In our healthcare system it reduces demand for inpatient beds, provides significant cost savings and improves patient satisfaction due to choice and reduction wasted bed days.
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References


