Post-operative Nursing Management:
Hip Fracture Surgery

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Epidemiology

- Hip fracture is a major health problem as population ages.
- 2003: 40,000 elderly fall, 25% fracture
- HK (2031): 24.3% population >65yrs
- World wide (2050): 6.3 million hip #
- ½ women & 1/3 men sustain a fragility fracture during their life time (Karlsson et al, 2005)
**ORIF VS Hemiarthroplasty**

<table>
<thead>
<tr>
<th></th>
<th>ORIF</th>
<th>Hemi-arthroplasty</th>
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<tbody>
<tr>
<td>Shorter length of anaesthesia</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Less blood loss</td>
<td>✓</td>
<td></td>
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<tr>
<td>Lower blood transfusion</td>
<td>✓</td>
<td></td>
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<tr>
<td>requirement</td>
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<tr>
<td>Low risk for 2° surgery</td>
<td></td>
<td>✓</td>
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- Parker et al 2002 (RCT of 455 patients)
## ORIF VS THR

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<thead>
<tr>
<th></th>
<th>ORIF</th>
<th>THR</th>
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<tbody>
<tr>
<td>Lower failure rate</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Better hip function</td>
<td></td>
<td>✓</td>
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<tr>
<td>HRQOL</td>
<td></td>
<td>✓</td>
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<tr>
<td>Low revision rate</td>
<td></td>
<td>✓</td>
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</table>

- Tidermark et al, 2003 (RCT of 102 patients)
Arthroplasty as 1° surgery

- THR > bipolar hemiarthroplasty > ORIF
- #NOF in active, alert, independent elderly
- Better function
- Minimize 2° surgery e.g. removal, revision
- Better HRQOL

(Blomfeldt et al, 2007 RCT of 120 patients)
Post-op

D0

↓

D1-3 RV off, X-ray

Weight bearing as tolerated

↓

D14 off S/S
Immediate Post-op

- Hourly hemodynamic status
- Monitor blood loss and fluid balance
- Observe for wound oozing and signs of infection
- Wound care
- Lower limb circulation and sensation
- Pain management
- Alignment
Out of bed
Muscle training

• Progressive resistance muscle training optimize muscle strength & improve functional capability in elderly after hip fracture surgery

• Knee extension: $\uparrow 72\% \pm 56\%$

• Leg press: $\uparrow 37\% \pm 30\%$

• (Host et al, 2007)
Muscle Back
Complications

- Massive blood loss
- Wound infection
- Superior gluteal nerve dysfunction
- DVT
- AROU
- Post-op delirium
- Dislocation

(Dharmarajan & Prabir, 2006)
DVT

• Risk period: 3 month after hip surgery
  (Bjornara et al, 2006)

• 35% - 42% in Caucasian hip #
  (Eriksson et al, 2003)

• 3% in Chinese population with hip #

• Not recommended for prophylaxis anti-coagulation therapy
  (Chan et al, 2004)
Management of DVT

**Prevention**
- Ankle pump exercise
- Early ambulation

**Treatment**
- Bed rest
- LMWH
- Warfarin
- Monitor clotting
- Pressure stocking
AROU

Risk factor

• Pain
• Position
• Anesthesia effect

• AROU $\Rightarrow$ UTI $\Rightarrow$ systematic infection
Management of AROU (QEH)

- Multi-disciplinary approach between O&T surgeons, urologist & nurse
- Foley intra-op
- Remove Foley within 2 days post-op
- Early mobilization & weight bearing
- Treat constipation, pain & UTI
- To KH after PU without Foley
“Trial without Catheter”

- Re-insert + CSU
- R/O bowel/renal disorder
- Consult Surgery/Urology
- Treat constipation, pain & UTI
- Early mobilization & weight bearing
- Try off Foley 2 days after re-insert
- To KH after PU without Foley
“Trial without Catheter”

- Foley to BSB
- Ix & Tx underlying cause by urologist e.g. BPH
- Treat constipation, pain & UTI
- CIC/CISC with RU monitoring in KH till problem solved
- FU by urologist for further Ix e.g. CMG
Delirium

- 41% after hip surgery
  (Brauer et al, 2000)

- Electrolyte imbalance, metabolic abnormalities

- Infection, hypoxia

- Pain, medications

- Altered environment, dementia
  (Dharmarajan & Prabir, 2006)
Management of Delirium (QEH)

- S – Stress reduction
- M – keep Memory
- A – Ask question
- R – Recall events
- T – Time and date orientation and pain control
SMART

Target patients

• > 65 years
• MMSE > 20
• No communication problem
SMART

• Orientate nursing intervention
e.g. environment, reason for hospitalization, peri-operative managements

• Show equipment

• Maintain memory ability
e.g. call by name, refer to calander

• Provide functional visual or hearing aids

• Provide visual and verbal orientation to date & time

• Adequate pain control
SMART

Consequent Assessments
- On admission
- The day before OT
- Post-op D1

Results
- experimental group: control group
  ⇒ 19.4% : 60%
Dislocation

- Anterior VS Posterior approach

- Higher rate of dislocation in posterior capsular approach (Bush & Wilson, 2007)

- Treatment: CR +/- OR +/- Revision
Posterior Approach
Anterior Approach

No!  Yes

©MMG 2003
ADL aids
Home Modification
Subsequent Fall

- Management of hip # does not end with surgery

- Prevention of fall
- Screen for osteoporosis and risk of fall
- Prevent and treat osteoporosis
  
  (Dharmarajan & Banik, 2006)
Prevent Subsequent #

- Community fall prevention campaign
- Fall assessment
- Hip Protector
Thank You!
References

• Bjornara BT, Gudmundsen TE, Dahl OE; 2006; Frequency and timing of clinical venous thromboembolism after major joint surgery: The Journal of Bone & Joint Surgery (Br), Mar 2006, 88,3; pp 386 – 391


• Dharmarajan TS, Prabir B; 2006; Hip fracture: risk factors, preoperative assessment, and postoperative management; Postgraduate Medicine, Jun/Jul 2006, 119,1; pp 31 - 38

• Eriksson BI, Lassen MR; 2003; Duration of prophylaxis against venous thromboembolism with fondaparinux after hip fracture surgery: a multicenter, randomized, placebo-controlled, double-blind study; Arch Intern Med 2003, 163; pp 1337 – 1342


• Lau EMC, Cooper C, Fung H, Lam KK, Tsang KK; 1999; Hip fracture in Hong Kong over the last decade – a comparison with the UK; Journal of Public Health Medicine, Vol. 21, No.3, pp.249 -250; Faculty of Public Health Medicine

• Parker MJ, Khan RJK, Crawford GAP; 2002; Hemiarthroplasty versus internal fixation for displaced intracapsular hip fractures in the elderly; The Journal of Bone & Joint Surgery (Br); Nov 2002, 84,8; pp 1150 -1155

• Tidermark J, Ponzer S, Svensson O. Soderqvist A, Tornkvist H; 2003; Internal fixation compared with total hip replacement for displaced femoral neck fractures in the elderly; The Journal of Bone & Joint Surgery (Br); Apr 2003, 85, 3; pp 380 – 388