BRITISH
HIP
SOCIETY

BHS SURGICAL STANDARD

Management of Total Hip Arthroplasty Peri-prosthetic fractures

Background & Inclusion

The rate of peri-prosthetic fracture (PPF) after total hip arthroplasty (THA) is 3.5% and expected to rise to 4.5% over the next 30 years[1]. It is the third most common cause for revision according to joint registries and is associated with major clinical and financial implications. This guidance applies to all PPF around primary and revision THA. Please note, although NOT specifically written for intraoperative PPF, much of the guidance is still relevant in this context.

Classification

1. All PPF (femoral and acetabular) should be classified according to the Unified Classification System modification of the Vancouver Classification[2].
2. PPF around cemented femoral stems should use the B2W and B2L modification[3].

Diagnosis

3. History taking should include: co-morbidities, pre-fracture symptoms, pre-fracture function, details of index operation and history of infection.
4. Examination should include documentation of complete neurovascular status and secondary survey.
5. Imaging should include scaled AP pelvis and full femur AP and lateral radiographs. Consider CT to confirm extent or implant fixation. CT all suspected acetabular PPF. Consider MRI where soft tissue concerns eg adverse reaction to metal debris (ARMD), collections, abductor deficiency. Vascular imaging where indicated and for all cases with intra-pelvic components.
6. All attempts should be made to obtain old imaging for comparison/ planning.
7. All attempts should be made to obtain index operation note and implant stickers.
8. Full bloods including FBC, U&Es, G&S, CRP and metal ion levels for constructs with metal-on-metal bearings.
9. Aspirate cases where there is clinical concern of infection.
10. Immediate senior orthopaedic and senior medical assessment with optimisation for surgery.
11. Prompt discussion at rapid-access MDT, able to provide plan within 24 hours of admission.
12. Recommendations should be documented formally. Outcomes audited biannually with quality assurance review of post-operative cases at scheduled regional MDTs.
13. Recommendations should include treatment options, appropriate theatre location and staff and to consider transfer to regional centres if indicated.

Management

14. Surgery should take place as soon as practically possible, within 72 hours for the majority of cases. Prompt access required to appropriate theatres with appropriately trained staff and assistants. Dual consultant operating should be facilitated when required.
15. Consideration can be given to conservative or minimal stabilisation for palliation in appropriate cases.
16. Appropriate equipment available for principal and any alternative surgical plans (fixation/ revision or both where appropriate).
17. Options for femoral fracture is based on implant stability as per the Unified Classification System.
18. Where fixation deemed best option: MIS fixation can be considered where the fracture pattern and surgeon experience are appropriate, adhering to AO principles.
19. Where revision deemed best option: maintain proximal bone and soft tissue attachments where possible.
20. For PPF around cemented stems consideration should be given, according to the B2L and B2W classification, to the adequacy of the cement bone interface in order to determine suitability for fixation or cement-in-cement revision ± bypass ± fixation.
21. Explanted devices should be sent to a recognised retrieval centre for analysis when there is concern regarding implant performance or if the implant is a new design (for example a Beyond Compliance registered implant).
22. If likely to be required post-operatively, HDU/ ITU availability should be confirmed prior to operation.
23. Autologous cell salvage should be available to be used during all cases.
24. Treatment algorithms should aim to allow full weight-bearing in the immediate post-operative period.
25. Any decision to retain or remove implants should be based on specific knowledge of those existing implants and the risk/ benefits as per MDT discussion and guidance.
26. All cases should be entered into the National Hip Fracture Database (www.NHFD.co.uk).

Escalation

27. Consider transfer to regional centres depending on available local surgical skills, revision/ trauma equipment and availability of high-level medical support.
28. PPF with concomitant infection, tumour or in multiply revised cases should be referred to regional centres.
29. Transfers should include clear documentation and liaison with named accepting surgeon, transfer of all images and notes and documented discussion with patient and family, if appropriate.

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[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7528669/
[2] https://doi.org/10.1302/0301-620X.96B6.34040
[3] https://doi.org/10.1302/0301-620X.103B1.BJJ-2020-0163.R1