Audit

Reducing missing fracture clinic radiographs by entrusting them to patients

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Background: Missing radiographs in fracture clinics may compromise fracture management and lead to inappropriate use of clerical resources.

Methods: We prospectively compared the number of missing radiographs in two hospitals over a period of two months. In hospital A the radiographs were retained and in hospital B they were entrusted to the patients.

Results: At the completion of the study, entrusting patients with their radiographs resulted in statistically less radiographs missing from the clinic.

Key words: Missing radiographs – Fracture clinic – Patient responsibility

Radiographs are integral to patient management in fracture clinics, but all too frequently previous films are unavailable causing difficulty with monitoring the progress of fracture union. This can lead to unnecessary radiation exposure for repeat radiographs, as well as clerical staff time wasted hunting down films that are often lost in the filing process.

We have audited a simple system of entrusting patients with their own radiographs to reduce the number of missing films at follow-up.

Patients and Methods

Two hospitals were compared prospectively over a 2-month period. In hospital A, all radiographs were retained and filed by the hospital then collected by a clerk for subsequent follow-up visits, as was normal practice. In hospital B, the fracture clinic radiographs were given to the patients with specific instructions to bring them to subsequent appointments.

Elective orthopaedic clinic radiographs in hospital B were filed normally as in hospital A, but also audited for the duration of the study as a control.

The films were ultimately retained in hospital B after patient discharge. The results were analysed using a Chi-square test.

Results

In hospital A, there were 1914 fracture clinic attendances during the study period and 102 sets of radiographs were not available (5.3%). In hospital B, there were 1463 fracture clinic attendances during the study period and 48 sets of radiographs were not available due to patients forgetting to bring their radiographs (3.3%), significantly less than for hospital A ($P < 0.01$).

In hospital B there were 1478 elective clinic attendances during the study period and 309 sets of radiographs were not available (21%), significantly more than either hospital fracture clinic ($P < 0.001$).

Discussion

The management of fractures is heavily influenced by radiographic appearance and comparison with previous films is essential to monitor fracture progress. A written report does not allow accurate assessment of fracture pattern. Missing radiographs can compromise management, and often can lead to unnecessary radiation exposure and delay for repeat radiographs that would not otherwise be necessary.

The British Orthopaedic Association currently recommends that 5–10 min be allocated to each patient for a fracture clinic follow-up appointment.¹ This allows little time to search for films, or to try to speak to a colleague who may recall the prior fracture position.

Entrusting patients with their radiographs may also promote feelings of empowerment and so improve the doctor–patient relationship. Benefits have been seen in obstetric care when patients have been given access to their records. Draper *et al.*² and Elbourne *et al.*³ highlighted subjective benefits of increased responsibility for, and control of, their own management decisions by patients. They also showed objective benefits in savings of clerical time and resources.

Similar objective outcomes have been demonstrated in general practice by Bird *et al.*⁴ and by Baldry *et al.*⁵ as well as subjectively increased trust in the doctor–patient relationship when patients were allowed access to their notes prior to a consultation. In a recent press release, general practices in Derbyshire and Oxford are providing access to patient's records via the internet⁶ and the NHS Plan recommends that all patients should have access to their electronic records by 2004.⁷

Potential disadvantages of not retaining radiographs are the potential for the patient to lose or forget them and the lack of a formal written report. Tennent and Ferris⁸ reported 91.6% compliance in patients returning with their films at first follow-up but this decreased by 75% by the fourth visit. We demonstrated higher compliance with only 3.3% forgotten X-rays during the whole period, and no radiographs lost. The comparator group of elective patients in hospital B suggests even more radiographs may have been lost had patients not been entrusted with them.

The Royal College of Radiologists advise that all radiographs should be promptly reported, which is not possible with our system until patient discharge. Rose and Gallivan⁹ looked at reporting trends in the UK and

showed that 10% of all films were never reported, mainly those from fracture clinic. The principal reason given was that the report would have been too late to alter patient management.

In the accident and emergency setting, Wardrope and Chennells¹⁰ showed a prevalence of error by casualty officers of 6.2% when films were subsequently reviewed by a radiologist. Only in 1.1% of cases, however, did a formal report appreciably alter patient management. Errors were seldom made by accident and emergency consultants or registrars and we suggest the error rate of orthopaedic consultants and SpRs in clinic may be even less, making the usefulness of a formal report prior to discharge from clinic dubious.

Conclusions

Giving patients their own radiographs to bring to follow-up reduces the incidence of missing films and saves clerical time. Further investigation may be needed to identify characteristics of patients for whom this system may not be suitable, since there is a group who still forget their films.

References

1. British Orthopaedic Association. *Advisory Book On Consultant Trauma and Orthopaedic Services*. London: British Orthopaedic Association, 1999.
2. Draper J, Field S, Thomas H, Hare MJ. Should women carry their antenatal records? *BMJ* 1986; **292**: 603.
3. Elbourne D, Richardson M, Chalmers I, Waterhouse I, Holt E. The Newbury Maternity Care Study: a randomized controlled trial to assess a policy of women holding their own obstetric records. *Br J Obstet Gynaecol* 1987; **94**: 612–9.
4. Bird AP, Walji MTI. Our patients have access to their medical records. *BMJ* 1986; **292**: 595–6.
5. Baldry M, Cheal C, Fisher B, Gillett M, Huet V. Giving patients their own records in general practice: experience of patients and staff. *BMJ* 1986; **292**: 596–8.
6. Department of Health. *First patients get on-line access to their own medical records*. Press Release 2001: 2001/121 (6 March 2001).
7. Anon. *NHS Plan. A Plan for Investment. A Plan for Reform*. London: NHS, 2002.
8. Tennent TD, Ferris BD. Can I have my X-rays please? Poster presentation. BOA proceedings 1998.
9. Rose JF, Gallivan S. Plain film reporting in the UK. *Clin Radiol* 1991; **44**: 192–4.
10. Wardrope J, Chennells PM. Should all casualty radiographs be reviewed? *BMJ* 1985; **290**: 1638–40.