On-line Case Report

An unusual occurrence in surgical site marking

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ABSTRACT

This case report details an unusual, but preventable, error in surgical site marking.

Keywords: Wrong-site surgery – Transfer – Permanent marker

Wrong-site surgery captures national attention and has provoked escalating efforts towards prevention.¹ The term 'wrong-site surgery' typically encompasses surgery on the wrong person, the wrong organ or limb.

Surveys suggest the incidence could be as common as 1 in 3000 for spinal surgery and around 1 in 27,000 for hand surgery.^{2,3} A retrospective study performed in 2006 looking into compensation claims resulting from wrong-site surgery in all specialities estimated the incidence to be around 1 in 113,000.⁴ Between 21–50% of surgeons admit to performing at least one or more episodes of wrong-site surgery during their career.^{2–5}

In order to address this problem, the National Patient Safety Agency in league with The Royal College of Surgeons of England and the American Joint Commission on Accreditation of Healthcare Organizations have developed guidelines for the prevention of wrong-site surgery.^{6,7} Their protocols emphasise three minimum requirements – pre-operative verification, site marking, and a 'time-out' in the operating room.

Case report

A 44-year-old woman was admitted to our institution for tendo-achilles repair of her left ankle. She was consented

and the surgical site marked with an arrow drawn in permanent marker on the inner aspect of her left calf indicating the site of rupture.

All pre-operative checks were performed in line with trust protocol. However, after induction of anaesthesia, it was noted by the anaesthetist that both the patient's legs were marked with an arrow. As can be seen in Figure 1, the patient must have unintentionally press transferred the original mark to the contralateral limb; the transfer was only detected when both limbs were exposed in the anaesthetic room.

Discussion

Our institution employs a time-consuming, extensive pre-operative checklist in order to prevent wrong-site surgery. Although this case of mark transfer did not result in patient harm, there are important lessons to be learned from this case.

Protocols to prevent wrong site surgery should include a check to ensure no other limbs are marked before the patient enters theatre. Individuals with the responsibility for patient marking should avoid marking the medial aspect of the lower limb to minimise the chance of mark transfer.

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Figure 1 Sequence of images showing transfer of permanent marker from leg to leg.

Currently, no protocol exists which will guarantee correct site surgery in every case. Incident reporting in the current environment of clinical governance will highlight these potential problems so that existing systems can adapt towards greater patient protection. Ultimately, it remains the surgeon's responsibility to ensure the correct site of operation in every case.

References

1. Jenkins R. Hospital pays out over death of baby after surgery on wrong lung. *The Times Online* 27 June 2007; <http://www.timesonline.co.uk/tol/life_and_style/health/article1991416.ece> [Accessed April 2008].
2. Mody M, Nourbakhsh A, Stahl D, Gibbs M, Alfawareh M, Garges K. The prevalence of wrong level surgery among spine surgeons. *Spine* 2008; **33**: 194–8.
3. Meinberg E, Stern P. Incidence of wrong-site surgery among hand surgeons. *J Bone Joint Surg Am* 2003; **85**: 193–7.
4. Kwaan M, Studdert D, Zinner M, Gawande A. Incidence, patterns, and prevention of wrong-site surgery. *Arch Surg* 2006; **141**: 353–7.
5. Sheldon T, Wright J. Experience of wrong site surgery and surgical marking practices among clinicians in the UK. *Qual Safety Health Care* 2006; **15**: 363–8.
6. National Patient Safety Agency. *Patient briefing – Correct site surgery*. 2005 <http://www.rcseng.ac.uk/publications/docs/patient_briefing.html?searchterm=wrong%20site%20surgery> [Accessed April 2008].
7. Joint Commission on Accreditation of Healthcare Organizations. *Universal Protocol for Preventing Wrong Site, Wrong Procedure, Wrong Person Surgery*. JCAHO News Release 21 July 2003 <www.jcaho.org/accredited+organizations/patient+safety/universal+protocol/wss_universal+protocol.htm> [Accessed April 2008].