European Journal of Obstetrics & Gynecology and Reproductive Biology 220 (2018) 50–56

Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: www.elsevier.com/locate/ejogrb

Full length article

Improving communication at handover and transfer reduces retained swabs in maternity services

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ARTICLE INFO

Article history:
Received 25 August 2017
Accepted 8 November 2017

Keywords:
Swabs
Retained foreign objects
Handover
Communication
Maternity
Never event

ABSTRACT

Objective: To reduce the incidence of retained vaginal swabs and near misses.
Study design: A review of previous retained swab incidents and near misses in a large maternity unit identified handovers and transfers as a key point of vulnerability. Interventions were introduced to improve communication at handover from the delivery suite to theatre and from theatre to the high dependency unit. Process data was collected to monitor compliance. The outcome measures were the incidence of retained swab never events and the incidence of near misses. Chi-squared analysis was used to test the significance of the results.
Results: For transfers from delivery suite to theatre, verbal handover significantly increased from 28.8% to 75.6% ($p < 0.0001$), and written handover significantly increased from 4.4% to 62.9% ($p < 0.0001$). There were 291 transfers to theatre post-intervention: in 88 (30.2%) of these transfers a vaginal swab was already in situ. In 70/88 (79.5%) of cases the presence of the swab was communicated to theatre staff in three ways (verbally, written and transfer of opened swab packets) according to the new policy. In the post-intervention period there were 56 women transferred from theatre to the high-dependency unit with a vaginal pack in situ: 52 (92.9%) of these women had a sticker in place serving as a constant reminder of the presence of the vaginal pack to staff. Following a baseline of four near misses in two months, there has been only one near miss in the 15 months since the interventions were implemented, (33.3% vs. 1.1%, $p < 0.0001$). There have been no retained swab incidents since the project commenced.
Conclusions: Simple interventions to improve communication at handover and transfer can reduce the incidence of retained vaginal swabs and near misses. Further work is needed to raise the profile of swab counting in maternity settings: swab counting needs to be the responsibility of all disciplines, not just the responsibility of theatre staff.

Introduction

Obstetricians and midwives use swabs to absorb blood during vaginal birth and perineal suturing; on rare occasions, these are unintentionally left in situ. Retained foreign objects (swabs, sponges, needles and instruments) are a major patient safety concern in surgical procedures of all types [1]. In a large study of retained objects post-surgery, vaginal sponges and swabs accounted for 12 of the 54 incidents [2]. In the UK retained swabs after vaginal birth and perineal suturing have to be reported and are classed as "never events" [3]. Vaginal swabs accounted for 33 of the 107 retained foreign object incidents reported in 2015/2016 [4]. Retained vaginal swabs were more common than surgical swabs or any other category of foreign object [4].

The impact of retained vaginal swabs can be severe. Women may experience serious physical and psychological complications including infection, secondary post-partum haemorrhage, sepsis, depression, lack of bonding and loss of trust in the NHS [5]. Box 1 illustrates an example patient story. The experience of harming a woman is distressing for staff and the reputation of the organisation concerned may suffer [6,7]. A retained swab can also be expensive in terms of additional resources and time in hospital; where a claim is involved in addition, the average cost of compensation and legal fees in the UK is £16,000 [8].

In surgical procedures of all types, it is standard practice for counts to be performed before and after to reduce the risk of retained foreign objects. A retrospective analysis of retained

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https://doi.org/10.1016/j.ejogrb.2017.11.006

Box 1. Example patient story

Ten days post-partum following an instrumental birth and third degree tear repair, a first-time mother noted an offensive blood loss and visited her GP. The GP obtained a sample of vaginal discharge for culture and sensitivity and prescribed antibiotics. The woman continued to feel generally unwell and went back to the GP several times who changed her antibiotics on two occasions. On day 21 post-partum the woman passed a large blood clot which was found to contain a swab. She lost a further 1000 millilitres of blood and was admitted to hospital via ambulance. Upon arrival she had a raised lactate and was treated for sepsis. Following a course of intravenous fluids and antibiotics, she was discharged home six days later on oral antibiotics and iron therapy.

foreign objects revealed that counts had not been recorded at the time in a third of cases, and in cases where counts were performed, they were wrongly reported as correct at the time in 88% of incidents [2]. The reasons for incorrect or missing counts vary from case to case but common themes include system factors such as time pressure and multiple distractions; and cultural factors such as staff not engaging with swab count policies [2,9–11]. The involvement of multiple teams also introduces additional complexity with potential for failures of communication at handover [9,10]. Interventions such as the World Health Organization (WHO) Surgical Safety Checklist have helped to reduce the incidence of retained swabs in surgical settings [12].

There are very few interventions reported in the literature to reduce retained swabs specifically in maternity settings, although maternity-specific guidelines do exist [13]. The use of a sponge-count sheet, documentation of the accuracy of sponge counts and communication training has been shown to improve compliance with sponge counting procedures in maternity [14]. A large hospital-wide study which included maternity settings reported a reduction in incidence of retained foreign objects from one incident every 16 days, to one incident every 69 days [15]. The interventions included a review of previous incidents of retained foreign objects and institutional policies; an awareness and communication phase; and a monitoring and control phase which included auditing of compliance and rapid investigations following incidents and near misses. Reducing retained swabs is more complex than it initially seems, and is not simply a matter of counting correctly [16].

This paper describes a maternity specific intervention to reduce the incidence of retained swabs in a large maternity unit in the UK. The project was initiated in response to two retained vaginal swab never events.

Method

Setting

The project was undertaken in a large UK maternity unit with 13 birthing rooms, three theatres and a high-dependency unit. There are over 600 births a month in the unit. Approximately 48 women a month are transferred to theatre for suturing, manual removal of placenta or examinations under anaesthetic; approximately five women a month are transferred with swabs already in the vagina. The unit manages higher risk pregnancies for the region. Low-risk pregnancies are typically managed elsewhere in midwifery-led units.

Developing the intervention

A multidisciplinary project team was brought together in September 2015: the team included senior and junior midwifery staff, clinical governance and practice development midwives, theatre staff and an advanced maternity support worker. An analysis of incident reports for two retained swab never events, defined as retained swabs detected post-discharge, and three near misses, defined as retained swabs detected by staff pre-discharge, over the past four years (2012–2015) was conducted. Detailed incident reports for the two never events were reviewed as well as patient notes and the original incident report forms for the three near misses. A common theme in the incidents was transfers and handovers suggesting that these were points of particular vulnerability in the care process (Box 2). All of the near misses highlighted failures of communication between professionals.

A process map was created by the multidisciplinary team which highlighted the role of distraction and interruptions in the counting process, failures of communication during handover to theatre and to the high-dependency unit, lack of staff to conduct second counts and inconsistencies in how and where counts were recorded. The lack of an agreed standardised method for notifying staff about the presence of vaginal swabs in situ was a clear weak point. Fig. 1 shows a simplified version of this map.

Improving handover from delivery suite to theatre

The local swab policy was reviewed and amendments made to the section on handover of women transferred to theatre from delivery suite. The first key policy change was that if a swab was placed in the vagina in the delivery suite, all other swabs and strings had to accompany the woman upon transfer to theatre. A paper bag was introduced into the delivery packs to facilitate this. Swabs come in packs of five with one red string per pack; red strings and unused swabs are an important part of the counting process in theatre handover.

The second key policy change for women transferred to theatre with swabs already in situ, was that the swabs needed to be counted and signed for in the patient notes by both the primary midwife and theatre staff at handover (see Fig. 2). If there are no swabs in situ, the policy changes required the midwife to tick “N”

Box 2. Timing of handover and transfers of care in previous retained swab never events and near misses

1. Transfer from delivery suite to theatre for third degree tear repairs
2. Transfer from delivery suite to theatre for forceps delivery
3. Handover from midwife to delivery suite co-ordinator for additional suturing of a second degree tear
4. Transfer from midwifery led unit to high-dependency unit for post-partum haemorrhage and then to delivery suite for additional suturing