

Improving the ward-based care of patients post-thyroidectomy

ABSTRACT

Nursing staff play a crucial role in managing surgical patients in the postoperative period. However, with an increasing risk of subspecialty wards facing closure as a result of financial pressures within the NHS, the knowledge base and expertise of ward-based nursing staff of surgical subspecialties is becoming increasingly limited. Using patients undergoing thyroidectomy as an example, a quality improvement multidisciplinary audit is presented, which shows how simple targeted interventions through a multidisciplinary approach can help maintain high standards of patient care in a secondary care setting.

The quality of ward-based care has a direct impact on the overall outcomes of patients admitted to hospital (Cheung et al, 2008).

Patients undergoing surgery are at a particularly high risk as they can potentially deteriorate rapidly in the postoperative period (National Patient Safety Agency, 2007).

During this phase of recovery nursing staff on the wards play one of the most crucial roles, as they have the most contact with patients (Liaw et al, 2011). In addition to providing direct nursing care, while administering medications and adequate nutrition, they also have an important role in regularly monitoring patients by assessing their vital observations and maintaining

fluid-balance charts in order to detect any signs of deterioration early. They are also the first point of contact with patients' relatives, hence it is imperative that they have a good understanding of the patient's clinical condition.

Hospitals have traditionally been able to provide dedicated subspecialist wards for each surgical specialty. However, with the financial pressures faced within the NHS, such specialist wards are at risk of being closed down, and an increasing number of patients are now being managed on general surgical wards (Foxton et al, 2014). It has been suggested that outcomes may be poorer on such generalist wards when managing patients requiring specialist expertise (Aiken et al, 1999).

Otolaryngology requires appropriately trained nursing staff with a specific skill-set and it has previously been shown that staff on specialist ear, nose and throat wards have a better knowledge base than those on general wards (Foxton et al, 2014), through a questionnaire-based survey addressing the management of epistaxis, otitis externa and postoperative patients. This increased awareness is likely to improve the overall quality of care provided.

Within the authors' hospital, patients undergoing ear, nose and throat surgery were no longer managed on a dedicated specialist ward, but were instead being cared for on two generic surgical wards, which included both elective and emergency patients admitted under the care of various surgical teams including general, vascular and orthopaedic and ear, nose and throat surgery.

Patients undergoing thyroidectomy are one cohort of ear, nose and throat patients who are routinely being managed on general wards. They can be high risk as complications in the postoperative period are potentially life threatening. These include hypocalcaemia (5.5%; Baldassarre et al, 2012) and airway obstruction as a result of postoperative haematoma (0.1–1%; Savargaonkar, 2004), or recurrent laryngeal nerve palsy (0.9–5.1%; Chiang et al, 2005). Such scenarios are rare, so the majority of nurses would have limited experience of managing them first hand. However, as patients can deteriorate rapidly, it is imperative that ward-based clinical staff are competent in appropriately managing these patients in the initial stages.

A pilot study of junior doctors within the authors' institution suggested that medical staff were not confident in the management of patients post-thyroidectomy, and this was improved through departmental education sessions. However, it was unclear whether nursing staff looking after these patients had a similar lack of confidence. This quality improvement project assessed whether nurses had the theoretical knowledge to care for this specific patient group following thyroidectomy, and enhanced their awareness of the postoperative management of these patients.

Methods

A prospective, questionnaire-based audit was conducted evaluating understanding of perioperative management issues for thyroidectomy patients. The project was registered with the audit department and no ethical approval was required.

The study population consisted of all nursing staff on the two surgical wards on which ward-based clinical care was provided for patients following thyroid surgery.

The questionnaire was initially piloted among junior ear, nose and throat doctors, and changes were made using the feedback received, in order to ensure that the questions were both relevant and appropriate

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to the ward-based care of this patient group. In particular, it addressed surgical complications following thyroidectomy, the necessary investigations required in the postoperative period, signs and symptoms of hypocalcaemia and indications for removing surgical drains (Figure 1). The correct, acceptable answers were based on local guidelines that had already been established within the trust. Positive (each correct answer) and negative marking (each incorrect answer) was used, and the maximum possible score was 15.

Following the initial data collection, trust guidelines were refined by the surgical and endocrinology teams and a proforma was created, which was published on the hospital's intranet. Leaflets were distributed to all ward-based staff and posters were placed on the wards so that medical and nursing staff could refer to them readily (Figure 2).

“ The results clearly show that such targeted interventions can improve the knowledge base of nursing staff... nurses who participated ... felt more confident in managing thyroidectomy patients in the postoperative period. ”

A further intervention of a ‘training episode’ was made, to highlight the initial results and improve the knowledge base of nursing staff. Short educational sessions were given by two experienced senior house officers (who had been briefed by the senior thyroid surgeon in the trust) to nursing staff. These took the form of a 10-minute presentation given to the nurses on wards in order to improve their basic knowledge of thyroid surgery. This addressed the anatomy, physiology, and how to assess and manage postoperative complications. Following this, a question and answer session allowed

nurses to discuss any problems they had encountered in the postoperative period and improve their confidence when managing these patients. These sessions lasted up to 30 minutes.

The audit cycle was repeated 2 months (cycle 2) and 6 months (cycle 3) following the intervention to demonstrate the immediate effect and the sustainability of the intervention. Statistical analysis was performed using the paired *t*-test, using a significance level of *P*<0.01.

Results

Fifteen nurses were recruited in total, and all participated in both audit cycles. Mean scores for each question are shown in Figure 3. The mean overall scores were 6.7 (cycle 1), 13.6 (cycle 2) and 13.5 (cycle 3). There was a statistically significant improvement between cycles 1 and 2. This improvement remained statistically significant in cycle 3 in comparison to cycle 1.

Notably, the mean scores improved for each individual question between cycles 1 and 2, and remained consistent between cycles 2 and 3 (Figure 3). Furthermore, the score of each individual nurse improved from cycle 1 to cycle 2.

Discussion

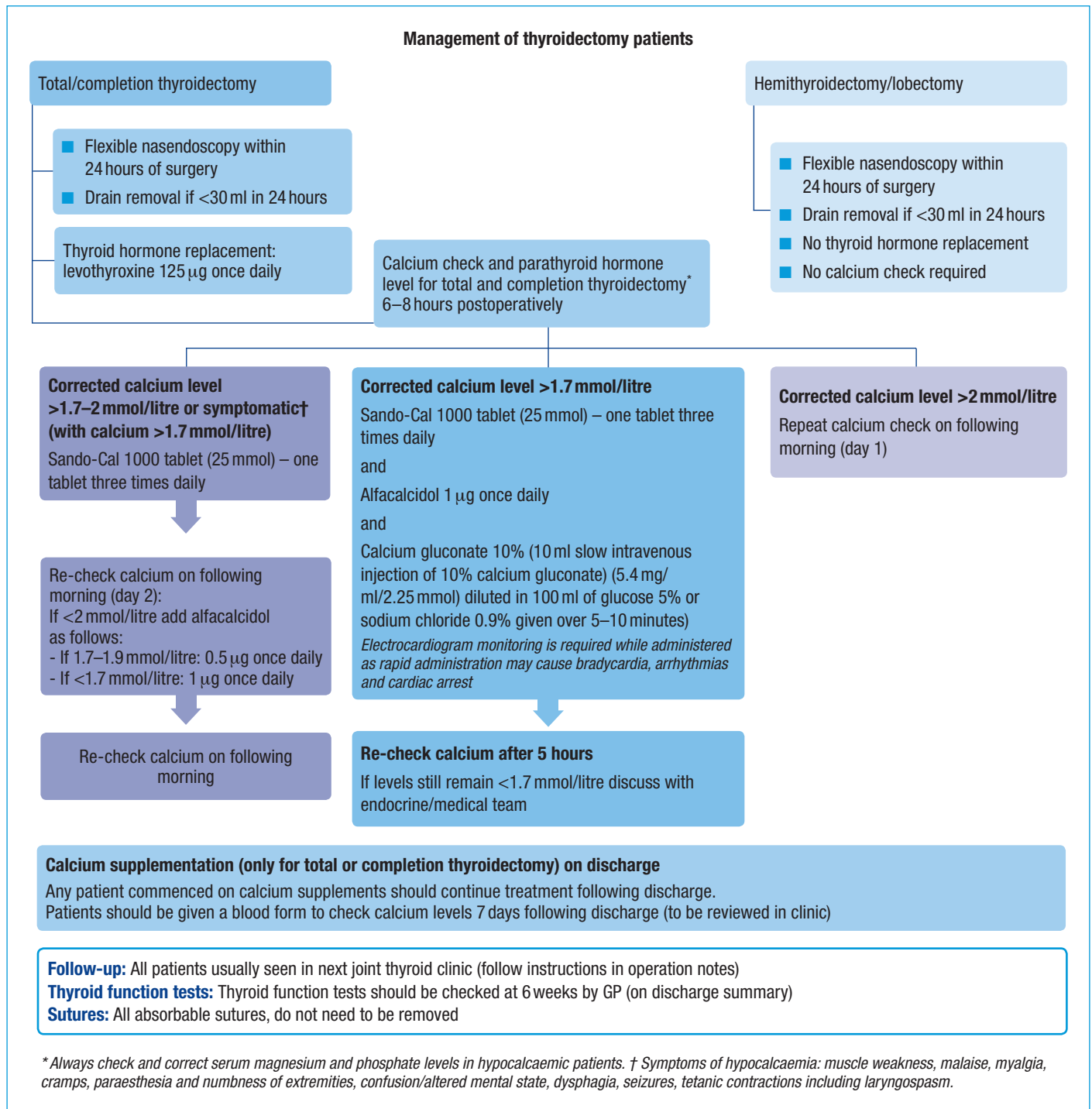
This study outlines a proforma which is based on a general consensus in the management of patients undergoing thyroid surgery. Using this proforma has increased awareness by ward-based nursing staff of how to manage these patients. The results clearly show that such targeted interventions can improve the knowledge base of nursing staff. The general consensus among the nurses who participated was that they felt more confident in managing thyroidectomy patients in the postoperative period.

The main limitation of this study was that the number of nursing staff recruited was only 15. However, these included all the staff on the two relevant wards who managed patients who had undergone thyroid surgery, hence the authors believe that these results

Figure 1. The questionnaire with acceptable correct answers (as per local guidelines).

Management of patients post-thyroidectomy			
1. Which of the following are complications following thyroidectomy?		4. Which of the following are symptoms of hypocalcaemia?	
Change in voice	<input checked="" type="checkbox"/>	Muscle weakness	<input checked="" type="checkbox"/>
Breathing difficulties	<input checked="" type="checkbox"/>	Paraesthesia (tingling sensation)	<input checked="" type="checkbox"/>
Hypercalcaemia	<input type="checkbox"/>	Tetany (muscle spasm)	<input checked="" type="checkbox"/>
Hypocalcaemia	<input checked="" type="checkbox"/>	Confusion	<input checked="" type="checkbox"/>
Haematoma	<input checked="" type="checkbox"/>	Dysphagia	<input checked="" type="checkbox"/>
		Seizures	<input checked="" type="checkbox"/>
2. Which of the following investigations must be done routinely on the evening of surgery?		5a. Which of the following postoperative thyroid patients need a calcium check?	
Chest X-ray	<input type="checkbox"/>	Total thyroidectomy	<input checked="" type="checkbox"/>
Electrocardiogram	<input type="checkbox"/>	Hemithyroidectomy	<input type="checkbox"/>
Flexible nasoendoscopy	<input checked="" type="checkbox"/>	Thyroid lobectomy	<input type="checkbox"/>
Blood haemoglobin check	<input type="checkbox"/>		
3. When should the drain be removed?		5b. And when should the first check postoperatively be?	
After review by the doctors	<input checked="" type="checkbox"/>	On the evening of surgery	<input checked="" type="checkbox"/>
The morning after surgery	<input type="checkbox"/>	The morning after surgery	<input type="checkbox"/>
Two days after surgery	<input type="checkbox"/>	24 hours postoperatively	<input type="checkbox"/>
When drain output <25 ml in 24 hours	<input type="checkbox"/>		
When drain output <30 ml in 24 hours	<input checked="" type="checkbox"/>		

Figure 2. The proforma distributed on wards as part of the intervention.



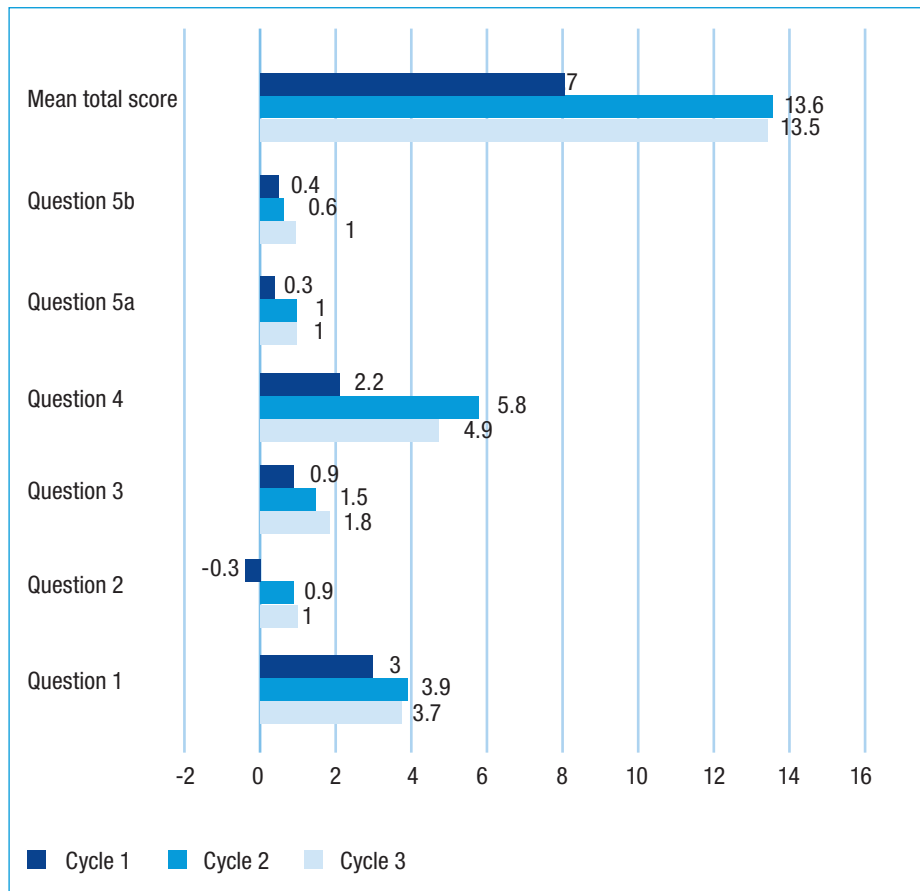
are representative. One of the strengths of this study is that the same nurses participated in all three cycles, hence pre- and post-intervention scores were directly comparable. Furthermore each individual nurse demonstrated an improvement in his or her own overall score.

At this challenging time when the NHS is facing significant financial pressures, and specialist surgical wards are under threat,

it is important that patient care is not compromised. While such changes are less likely to affect medical staff who still work within their respective specialist teams, it is perhaps more likely to have an impact on the knowledge base and skill set of nursing staff, as they are required to provide care to all patients on wards, across the specialties, hence are unlikely to develop the same level of experience within each subspecialty.

In this study, it was clear that initially the majority of nurses were not confident in the key management issues for patients undergoing thyroid surgery. The early recognition of potential life-threatening complications such as airway obstruction and hypocalcaemia is crucial. Furthermore, understanding when drains should be removed is also important as premature removal may increase the incidence of

Figure 3. Mean scores for each question.



haematomas. Inefficient management may affect the quality of care and may even result in incidents surrounding patient safety.

This study highlights the need for doctors and nurses to work closely together in order to ensure that high standards of care are maintained. In this case, it was the medical staff who guided the nursing staff, equipping them with the appropriate skills and knowledge. However, the same nursing staff will then be able to impart their acquired knowledge to new junior doctors, who may have little experience of managing such patients. This interprofessional collaboration will maintain and drive high standards of care within hospitals in the future (Pape et al, 2013).

Future work

As staff rotate between wards, in order to ensure sustainability, it is important that new nurses continue to receive education on the management of this cohort of patients. Following discussion within the department as to how this should best be approached, the arrangement was that

senior sisters would educate all new ward-based staff during the induction process. Repeat audits will be performed every 6 months thereafter to ensure that these standards are achieved.

Conclusions

The specialty of ear, nose and throat requires appropriately trained nursing staff with a specific skill set and knowledge base. Generically trained nursing staff may well be required to care for ear, nose and throat inpatients, but adequate specialty-specific training is imperative to ensure standards of patient care are not compromised. This quality improvement project demonstrates the importance of close interprofessional relationships in providing ongoing training and education in order to maintain high standards of patient care. The authors believe that a similar approach could be used among other medical and surgical specialties to maintain and improve high standards of care. **BJHM**

Statement of contribution: Mr S Mahalingam undertook project planning, data collection, intervention, analysis and writing the manuscript; Mr R Singhal undertook project

KEY POINTS

- With the current demands of the NHS, and with fewer dedicated subspecialist wards, it is imperative that doctors and nurses continue to work together to maintain high standards of care.
- Patients undergoing thyroidectomy are one cohort of patients who need to be observed closely in the immediate postoperative period. This article details the authors' local protocol on how these patients are managed.
- As junior doctors and nursing staff change jobs frequently, it is important that educational sessions are performed on a regular basis so that patient care is not compromised.

planning, data collection, intervention and analysis; Mrs S Mugilan undertook statistical analysis and writing the manuscript; Miss N Choudhury undertook overall supervision of the project.
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