Ear, nose and throat day-case surgery at a district general hospital

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ABSTRACT

INTRODUCTION In 2000, *The NHS Plan* in the UK set a target of 75% for all surgical activity to be performed as day-cases. We aim to assess day-case turnover for ENT procedures and, in particular, day-case rates for adult and paediatric otological procedures together with re-admissions within 72 h as a proxy measure of safety.

PATIENTS AND METHODS Retrospective collection of data (procedure and length of stay) from the computerised theatre system (Galaxy) and Patient Information Management System (PIMS) of all elective patients operated over one calendar year. The setting was a district general hospital ENT department in South East England. All ENT operations are performed with the exception of oncological head and neck procedures and complex skull-base surgery.

RESULTS Overall, 2538 elective operations were performed during the study period. A total of 1535 elective adult procedures were performed with 74% (1137 of 1535) performed as day-cases. Of 1003 paediatric operations, 73% (730 of 1003) were day-cases. Concerning otological procedures, 93.4% (311 of 333) of paediatric procedures were day-cases. For adults, we divided the procedures into major and minor, achieving day-case rates of 88% (93 of 101) and 91% (85 of 93), respectively. The overall day-case rate for otological procedures was 91% (528 of 580). Re-admission rates overall were 0.7% (11 of 1535) for adults and 0.9% (9 of 1003) for paediatric procedures. The most common procedure for re-admission was tonsillectomy accounting for 56% of all adult re-admissions and 78% of paediatric re-admissions. There were no deaths following day-case procedures.

DISCUSSION ENT surgery is well-suited to a day-case approach. UK Government targets are attainable when considering routine ENT surgery. Day-case rates for otology in excess of targets are possible even when considering major ear surgery.

KEYWORDS

Day-case – Length of stay – Ear procedures

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In 1990, The Audit Commission listed 20 surgical procedures across all specialities deemed suitable for day-case surgery.¹ This list has steadily increased with procedures considered suitable 50% of the time added in 1999² and a further 5 procedures added in 2001 following consultation with the British Association of Day Surgery (BADS).³ In 2000, *The NHS Plan* set a target of 75% of all surgical activity to be performed as day-cases⁴ and, in 2001, The Audit Commission found that there was potential for yet more expansion of day-case operations.⁵

The major drive towards more day-case surgery has been financial.⁵ However, other non-financial benefits of day surgery, such as reduced risk of infection, confer a significant advantage.

It has been shown that day-case surgery is generally preferred by patients when practical.^{6–10} Many different and sometimes conflicting concerns must be borne in mind in deciding whether day-case surgery is appropriate.¹¹ Factors

relating to the type of surgery, the surgeon, the choice of anaesthetic, the patient's fitness and social circumstances must all be assessed in order to ensure suitability.

Factors allowing an increase in day-case surgery include a 'mind-set' change amongst surgeons brought about by large trials quantifying postoperative risks and improved anaesthetics.¹² Actual surgical technique has not changed for many procedures in their transition to day-case. For example, cold-steel dissection tonsillectomy has changed little since its inception, but is now considered safe for day-case surgery. Indeed the National Prospective Tonsillectomy Audit showed cold-steel dissection to have fewer haemorrhagic complications than various 'hot' techniques.²¹

ENT is well-suited to a day-case approach.^{5,13} Many operations are for benign disease with well-documented, low complication rates. In addition, the population tends to be younger with less co-morbidity than in many other specialities. A recent audit regarding ENT day-case operating at

the Royal Sussex County Hospital showed the potential for increased day-case surgery with significant savings.¹⁴

The aim of this study was to assess the day-case operating figures for our ENT department in order to evaluate whether the Government targets are realistic and attainable. In addition, we evaluated re-admission rates within 72 h as a proxy measure of safety.

Patients and Methods

A retrospective analysis of elective operations over one calendar year from September 2005 to September 2006 was performed. All elective ENT operations were included. Information was gathered via the Galaxy theatre coding

system software and matched to the Patient Information Management System (PIMS) in order to evaluate patient demographics and admission details. Information gathered included procedure name, length of stay, re-admission within 72 h, and patient age. Day-case procedures were defined as those patients not requiring overnight hospital admission following their operation. This was independent of whether patients were operated on in the dedicated day-case unit or in main theatres.

Results

In total, 2538 elective operations were performed over the study period. There were 1535 adult procedures and 1003

Table 1 Common general ENT procedures and associated length of stay for all patients, otology procedures described separately

Primary procedure	Length of stay (days)				Total patients	Day-case (%)
	0	1	2	> 2		
Septoplasty	123	43	2	–	168	73
Intranasal ethmoidectomy	96	68	3	–	168	57
Septorhinoplasty	12	16	1	–	29	41
MUA nasal fracture	128	–	–	–	128	100
Nasal polypectomy	13	14	–	–	27	48
Excision of lesion on head and neck	98	10	2	2	112	86
Total thyroidectomy	–	1	4	1	6	0
Hemithyroidectomy	6	13	11	1	31	19
Panendoscopy (all)	71	19	1	3	94	76
Parotidectomy (total)	–	–	1	1	2	0
Parotidectomy (partial)	–	13	4	2	19	0
Submandibular gland excision	3	7	1	2	13	23
Lymph node biopsy	20	6	1	–	27	74
Tonsillectomy (adult)	148	39	–	–	187	79
Tonsillectomy (child)	207	218	10	–	435	48
Adenoidectomy (child)	129	12	2	–	143	90

Table 2 Paediatric otology procedures and length of stay

Primary procedure	Length of stay (days)				Total patients	Day-case (%)
	0	1	2	> 2		
Mastoidectomy	2	3	–	–	5	40
Insertion of ventilation tubes	162	7	2	1	172	94
Tympanoplasty including combined approach	12	3	–	–	15	80
Wax removal	15	1	–	–	16	94
Removal of foreign body	51	–	–	–	51	100
All paediatric otology procedures (26 codes)	311	19	2	1	333	93

Table 3 Major adult otology procedures and length of stay

Primary procedure	Length of stay (days)				Total patients	Day-case (%)
	0	1	2	> 2		
Mastoidectomy (all)	14	3	1	–	18	78
Tympanoplasty including CAT	46	6	1	–	53	87
Revision tympanoplasty	6	1	–	–	7	86
Stapedectomy	20	–	–	–	20	100
Pinnaplasty	5	–	–	–	5	100
Total	91	10	2	0	103	88

paediatric procedures (age 16 years and under). In the adult group, 1137 (74%) procedures were performed as day-cases and 328 (21%) were admitted for one day. Only 70 (5%) patients were admitted for more than one day. Of the 1003 paediatric operations, 730 (73%) were day-cases; 258 (26%) were admitted for a day and 15 patients (1%) were admitted for more than 1 day (Tables 1 and 2).

There were 580 otological operations in the study period. Of these, 333 (57%) were paediatric (Table 2) and 247 (43%) were adults (Tables 3 and 4). In the adult group, 217

(87.9%) were day-cases whilst in the paediatric group, 311 (93.4%) were day-cases. When considering major adult ear operations, we achieved a day-case rate of 88% (91 of 103). The overall day-case rate for otological procedures was 91% (528 of 580).

The majority of procedures had no associated re-admissions, the exceptions being listed in Table 5. Lymph node biopsy had the highest re-admission rate at 11% (3 of 27). One of these three patients was re-admitted for haemorrhage, the other two for swelling.

Table 4 Minor adult otology procedures and length of stay

Primary procedure	Length of stay (days)				Total patients	Day-case (%)
	0	1	2	> 2		
Excision of lesion external ear	26	1	4	1	32	81
Insertion of ventilation tube	53	2	–	–	55	96
Repair of lobe	6	–	–	–	6	100
Total	85	3	4	1	93	91
All adult otology procedures (36 codes)	217	19	9	2	247	88

Table 5 Re-admission in < 72 h, rates per procedure

Primary procedure	Total patients	Re-admission < 72 h	Percentage
Tonsillectomy (adult)	187	5	2.6
Tonsillectomy (child)	207	7	3.3
Adenoidectomy (child)	143	1	0.6
Lymph node biopsy	27	3	11.0
Submandibular gland excision	13	1	7.6
Excision of lesion on head and neck	112	1	0.9
Tympanoplasty including CAT (adult)	46	2	4.3

With respect to tonsillectomies, our results are similar to the data obtained in the National Prospective Tonsillectomy Audit,²¹ with 2.6% (5 of 187) adults being re-admitted and 3.3% (7 of 207) of children. Our standard practice is to use cold-steel dissection with re-usable instruments in adults and coblation tonsillectomy in children. Only one adult needed a return to theatre and no children. Children were admitted for pain control/nausea and reluctance to eat/drink.

Discussion

Our protocols are based on a number of studies published over the last 20 years specifically relating to ENT day-case surgery. For example, regarding tonsillectomy, a meta-analysis of 8889 patients by Tewary *et al.*¹⁵ in 1993 showed a primary haemorrhage rate of only 0.5%. Moralee and Murray¹⁶ reported a case series of 2157 patients showing a serious haemorrhage rate of 0.8% of which 95% occurred in the first 7.8 h of surgery. With this in mind, in our unit adult tonsillectomies are performed by cold-steel dissection and are discharged at 7 h postoperatively. This approach is also supported by the National Prospective Tonsillectomy Audit in 2005,²¹ which showed 'hot' techniques to be potentially more hazardous than cold-steel dissection. There still exist concerns over postoperative pain and nausea and also drowsiness;¹¹ these, along with haemorrhage, would justify admission overnight.

Our results demonstrate that of 187 adult patients undergoing tonsillectomy, 79% went home the same day, and the remainder were discharged the following day.

Other studies have looked at the suitability of other operations with Philpott and Banerjee¹⁷ in 2005 estimating that 92% of septal surgery could be undertaken as day-case. Banfield *et al.*¹⁸ and Georgalas *et al.*¹⁹ described rhinoplasty admission rates of 15% and 3%, respectively, with Danielsen²⁰ having described day-case functional endoscopic sinus surgery without complication. Again, our experience confirms these procedures as practicable for a day-case approach.

In our hospital, elective patients are listed for surgery and then attend a SHO-led pre-assessment clinic close to their admission date. From here, patients are sometimes referred for further anaesthetist assessment or accepted for surgery. Patients are then admitted on the day of surgery unless co-morbid conditions preclude this (*e.g.* diabetics requiring sliding scale insulin).

Six out of eight dedicated day-case lists are in the morning which allows patients sufficient time under observation to recover from the operation before being discharged home. Indeed, our day-case unit closes at 1800 h so all patients must have either been discharged or admitted by this time.

The remaining lists are not performed in the day-case unit but suitable patients are managed as day-cases and recovered in the day-case unit rather than in the ward setting. In this study, we have not looked at the chance of overnight stay if a patient is operated in the afternoon compared to in the morning, though this is anecdotally higher.

Children are always recovered on the children's ward and there is a policy that children undergoing tonsillectomy on an afternoon list are always admitted overnight. This prevents children being discharged late at night, which we feel would be unacceptable and unnecessary.

Postoperatively, adult patients generally have nurse-led discharge whilst all paediatric cases are reviewed by a doctor to authorise discharge. Children must have eaten, been to the toilet and recovered fully before being allowed home. For all patients, a reliable social situation is required to ensure safe discharge.

Limitations of study

We relied entirely on computer coding for this study and did not check directly patient notes. This meant we were limited to information contained on the computer database and, therefore, reliant on the quality and completeness of data entry. In addition, adverse outcomes other than re-admission were not measured.

Comparison with other studies

Our figures compare favourably with other published results and existing guidelines but it must be emphasised that we do not perform major head and neck oncological resections or complex skull-base and middle-fossa surgery.

Clinical applicability of study

Patient safety must remain a priority and this means that, whilst we can expect these percentages over a whole year, weekly variability means that there is a continuous need for available beds and staff for unexpected overnight stay. Without this safety net, it would be unsafe to list patients for day-case procedures. Otherwise, we suggest that our results would be reproducible in similar settings.

Conclusions

Our results demonstrate that with our patient mix an overall day-case rate of approaching the target of 75% is achievable across both adult and paediatric elective ENT procedures with acceptably low re-admission rates. Efficient day-case surgery depends on patient suitability, effective pre-assessment, the availability of morning operating lists and adequate social support. In particular, otological procedures are very amenable to day-case surgery, with rates of around 90% achievable even when considering major ear procedures.

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