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Assessing day-case septorhinoplasty: prospective audit study using patient-based indices

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Abstract
The objective of this study was to evaluate the safety, efficacy and acceptability to patients of day-case septorhinoplasty. Twenty-nine patients undergoing elective septorhinoplasty in a dedicated teaching hospital day-case unit were asked to complete day surgery questionnaires (DSQ) at six weeks post-operatively. Details of surgery performed, demographic data, readmission rates and complications were collected prospectively. No major complications were recorded. One patient had to be admitted for overnight observation following post-operative bleeding. The DSQ showed that the great majority of patients were satisfied from the day-case setting (satisfaction score 81). This preliminary study showed that day surgery septorhinoplasty was acceptable to the patient and was associated with a very low re-admission rate. We believe that in carefully selected young healthy patients it is an acceptable alternative to an in-patient procedure.

Key words: Ambulatory Surgical Procedures; Patient Satisfaction; Rhinoplasty

Introduction

In an environment of limited resources and increased expectations the practice of otolaryngology is evolving – and ambulatory surgery is a product of this evolution. Within the last decade we have witnessed a rapid expansion of day surgery. From 18–20 per cent of all elective procedures in 1992, when the Royal College of Surgeons of England issued its guidelines,[1] we have surpassed the 50 per cent mark, with over two million operations performed in a day-case setting last year. Otolaryngology accounts for a significant part of these procedures. There is, however, significant variation between hospitals on the selection of procedures suitable for day-case surgery. Although there is a consensus that young, healthy patients undergoing myringotomy and tympanostomy tubes insertion, direct endoscopies and operations under local anaesthetic can be discharged the same day, nasal surgery is more controversial. In a study of 1642 otolaryngological patients who had day surgery at the Royal National Throat, Nose and Ear Hospital, London, 29 had to be readmitted – 26 of them for bleeding following nasal surgery.[2] This is perhaps the reason why, although there have been a number of studies demonstrating the safety of day-case septoplasty,[3,4] it has not yet gained widespread acceptance.

Rhinoplasty is a procedure that is being performed routinely as a day case or even under local anaesthetic with sedation in the USA; however, in the UK it is generally considered an in-patient procedure. One series of patients having undergone day-case rhinoplasty[5] was recently published, but no prospective studies have been performed yet, and as such it can be considered as a new procedure in the UK. Whenever a new intervention is introduced, we feel that it is important to explore and record patients' experiences, as well as record objective results; this is the aim of outcome studies. These are based on three concepts:[6] (1) measuring effectiveness, meaning the operation results in the real patient situation as compared to efficacy which is usually the (much better) outcome of a procedure when it is performed under well-controlled settings; (2) using non-randomized research methodologies, again reflecting the real patient situation and (3) using expanded descriptions of patient outcomes.

Doctors performing day-case surgery are asked to combine their responsibility of providing optimal care to the individual patient with an equally important obligation to take into consideration limitations of resources and economic planning in an environment that is less tolerant towards failures. When a decision was taken to start performing septorhinoplasty as a day case at St Mary's it was felt it was essential to audit the procedure prospectively.

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The day case questionnaire has been validated as a precise and comprehensive instrument in assessing the patients' view of day surgery[7] and was used for measuring level 5 of the expanded patient outcome.

Patients and methods

All the patients who had had septorhinoplasty as a day-case procedure since its introduction in January until December 2000 were included prospectively in the study. Twenty-two patients were male and seven female, with a mean age of 27.8 years (range 17–48). The patients' suitability for day-case surgery was determined when they were listed, according to specific medical and surgical guidelines. All ASA I and II patients of less than 70 years of age were suitable to be listed for day-case procedures as per the St Mary's DSU protocol guidelines. Surgically, patients with tip deformities or deformities that necessitated an external approach or grafting were not listed for day surgery. All the procedures were performed in a dedicated day-case unit and took place in the morning. Written information about the day-care unit and the procedure was given to the patients. All patients underwent general anaesthetic. Moffett's solution (2 ml of 10 per cent cocaine, 2 ml of 1:1000 adrenaline and 5 ml of 0.9 per cent sodium bicarbonate) was applied to both nasal fossae 10 minutes prior to the procedure while the patients were anaesthetized. The nasal septum and dorsal skin were infiltrated with two per cent Xylocaine with 1:80 000 adrenaline using a dental syringe. The nasal septum was approached using a hemitransfixion incision and a septoplasty performed first. Following the septal surgery, intercartilaginous incisions between the upper and lower lateral cartilages were fashioned and combined with the hemitransfixion incision which was converted to a full transfixion extending approximately one third of the way down the columella, thus attempting to preserve the attachment of the medial crural footplates to the caudal septum. The nasal dorsal skin was elevated from the underlying osseocartilaginous skeleton via these incisions using a knife or scissors in the standard manner. Depending on the patient's deformity, osseocartilaginous dehumping and/or medial and lateral percutaneous osteotomies were performed. 4.0 catgut or 4.0 Vicryl Rapide were used for quilting sutures and closure of all incisions. Depending on the individual surgeon's judgement as to the overall bleeding at the end of the procedure, non-traumatic (paraffin or Jelonet) packs were used. A plaster of paris cast was applied in all cases. All patients were issued with written information on post-operative care and reviewed 10 days later when the external dressing was removed in an out-patient setting.

A standardized form was used to record patient details, operation notes and any complications as well as the outcome, at first and second follow-up. The patients were contacted first in writing and subsequently by telephone, if they did not reply, to complete the DSQ questionnaires. Chi-square tests and Fisher exact tests were used to compare groups in DSQ.

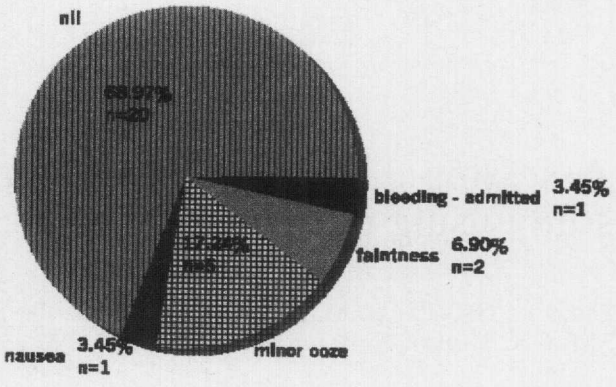

FIG. 1
Immediate complications of day-case septorhinoplasty.

Results

Objective results

Nineteen out of the 29 operations were performed by Specialist Registrars under the supervision of the senior author who performed the remaining 10. Nasal packs were used in 21 patients and were removed after an average of 3.7 hours (range three to five). The patients were discharged subsequently, an average of 5.45 hours post-operatively (range four to 6.5 hours).

Complications recorded during the immediate post-operative period included minor bleeding that settled spontaneously in five patients. There appeared to be no difference in bleeding between those patients who were packed at the end of the surgery and subsequently had the dressings removed to those who were not. Two patients experienced vasovagal episodes and one patient complained of nausea. None of these delayed the patients' discharge significantly. One patient (who had been packed) had moderate bleeding (3.4 per cent). No further interventions were undertaken in this patient as the bleeding settled. She was, however, admitted for overnight observation (Figure 1).

Patient-based indices

DCQ. The day-case questionnaire was developed by the University of Dundee in 1999 as a way of comprehensively describing and monitoring patients' experience of day-case surgery. It consists of 28 open and closed questions, the key areas being patients' attitude towards the operation, information about the procedure, outcome measures (pain, disability following the procedure), timing of events (time of discharge, time of admission, time kept waiting) and support services (use of hospital services/GP services after discharge). Many questions point towards satisfaction, however, whether the patient would undergo the same operation again as a day case and whether they would recommend day surgery to a friend are used as indicators of overall satisfaction with day surgery.

Sixteen out of 21 (76 per cent) and 15 out of 21 (71 per cent) of patients stated that they had received written information and had the treatment explained to them before the operation respectively. Twelve

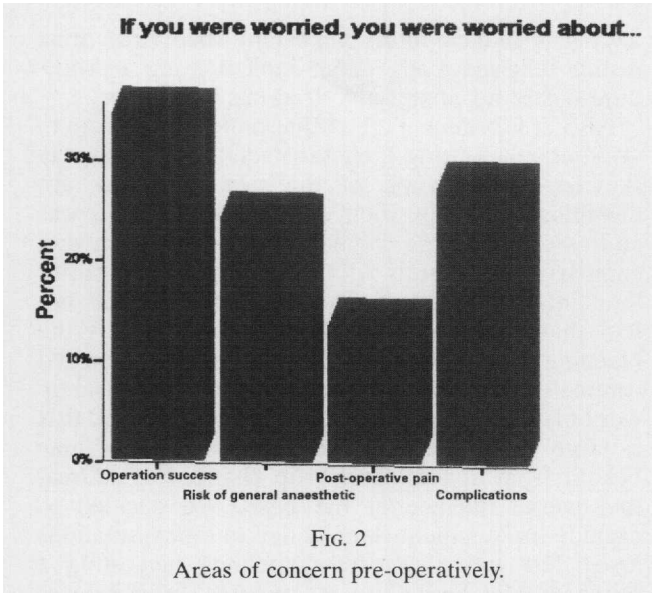

FIG. 2
Areas of concern pre-operatively.

out of 21 (57 per cent) of patients admitted to being 'Just a bit worried' pre-operatively, and three (14 per cent) 'Quite worried' while one was 'Not worried at all' and one 'Very worried'. They worried about the success of the operation (34 per cent) and complications (28 per cent), the use of general anaesthetic (24 per cent) and post-operative pain (14 per cent) (Figure 2). Seventy-one per cent stated that someone explained the operation to them although only 57 per cent actually received written information *during* their stay. Interestingly, the main factors that caused dissatisfaction were parking at the hospital (19 per cent) followed by the attitude of the doctors (14 per cent) and level of privacy in ward (10 per cent) as well as things to keep them occupied (10 per cent), pain control immediately after the operation and after effects of the anaesthetic (10 per cent) (Figure 3). The pain experienced during the first 24 hours following the operation was characterized as 'a little' by 19 per cent and 'a fair amount' by 25 per cent with a small minority (two and one respectively) declaring that they had no pain or a great deal of pain. Seven patients stayed in bed for one to three days, with five staying four to seven and five no days, while seven patients stayed indoors four to seven days and six more than seven days. However, virtually all the patients commented that they had no difficulty in performing routine daily activities. The recovery from the operation was characterized as being about as expected from 57 per cent of patients, faster than

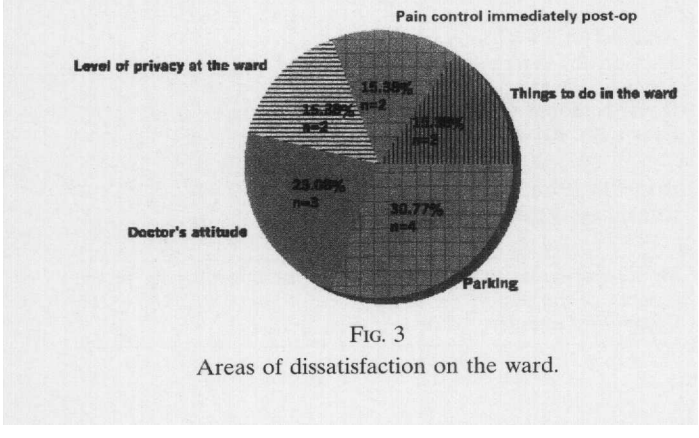

FIG. 3
Areas of dissatisfaction on the ward.

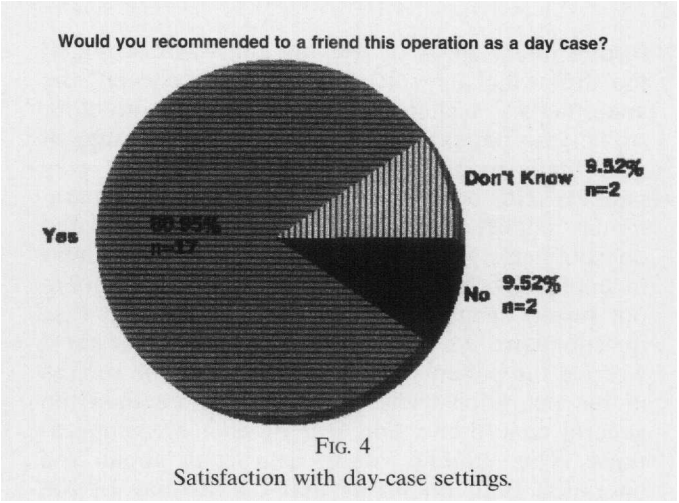

FIG. 4
Satisfaction with day-case settings.

expected from 20 per cent and slower in 14 per cent. Fourteen per cent of patients stated that they would have liked more help from the out-patients department, although almost all received either a great deal or quite a lot of extra help from friends, family and neighbours. Fifty-seven per cent felt that the person most helpful in explaining the operation was the surgeon, followed by the hospital nurse 38 per cent and the anaesthetist 14 per cent. Overall 61 per cent felt that the information given about their treatment was about right while 14 per cent felt it was less than wanted and only five per cent stated it was more than wanted. Finally the satisfaction score with day-case rhinoplasty was 81, with 17 patients being satisfied with the day case arrangements, two preferring an in-patient setting and two undecided (Figure 4).

Discussion

The scope of day surgery in a cost and quality driven clinical environment is expanding. The importance therefore of assessing a new intervention thoroughly cannot be overemphasized. In this study, we tried to evaluate the effects that the introduction of day case rhinoplasty had on the patients at different levels – recording prospectively all the aspects of their care and getting feedback from them on the success of the operations and the suitability of the day – care settings. Prospective data collection meant that we could avoid the bias inherent in any retrospective study and also improve the quality of the data, including all the reported complications, no matter how minor.

In this respect, the overall admission rate of 3.4 per cent, is considered borderline, according to the Royal College of Surgeons guidelines which have a set a target of two to three per cent readmission rate for day-case procedures,[1] and it is higher than a published rate of 0.7 per cent out of 10 000 general surgical, orthopaedic and gynaecological procedures.[8] However, it compares favourably with septoplasty performed as a day case (quoted admission rates of 5.4 per cent,[3] 10.5 per cent[5] and five per cent[4]) while a retrospective day-case rhinoplasty study reports a rate of 12 per cent of unplanned admissions. It must be taken into account that the one patient who was admitted did not require any

further intervention or packing and was discharged the following day. It reflects positively on the anaesthetists' technique that, in contrast to other studies, no patients had to be admitted because of anaesthetic complications. Of course, the way patients felt about day-case rhinoplasty is of paramount importance: Using a previously validated questionnaire enabled us to evaluate our outcomes in an objective and comprehensive way and compare our results against benchmarks. Using the day-case questionnaire we noted that the factor that most worried the patients pre-operatively was the success of the operation itself, significantly more than the general anaesthetic, and fear of pain or complications. The patients were instructed about the operation both on listing and on the day of the operation and 76 per cent felt that the information given was 'about right'. This could explain that 13/17 were not worried at all or only a bit worried about the operation. It is, however, of note that only three quarters of patients remembered receiving written information pre-operatively and fewer still acknowledging receipt during the DCU stay. It was certainly our intention that all patients would be given written instructions and advice as it has previously been established that this is an important method of communication, particularly with the limited time available during consultations. Whilst we understand this to be the case, we are unsure as to whether the patients truly did not receive this information or whether they merely could not remember if they had been given it. However, based on the findings of the questionnaire, we now ensure that the information is definitely given as part of a pack regarding the day-care visit and similarly post-operatively and would hope that future audit results would reflect this as part of 'closing the loop'. The majority of the patients had no difficult in performing daily activities and none had to attend their GP surgery, something that could be important in terms of resources utilization, as it is frequently argued that early discharge simply shifts the burden of care to the GP, with a concomitant shift of costs. Factors of dissatisfaction that are currently being addressed included the parking at the hospital and things to do in the ward. However, the overall rate of satisfaction with day-case arrangements (81) is only slightly less than that of a previous study involving over 5000 patients where the satisfaction score was 85.[10] About 24 per cent of patients had 'a fair amount' or 'a lot' of pain during the first 24 hours post-operatively (compared to 26 per cent in the previous study).

Overall, we feel that the results are encouraging. The detailed feedback we had from the patients vindicate us in our decision to perform day-case rhinoplasty.

There are limitations in this study. The number of patients enrolled is the most obvious one that perhaps could jeopardize the generalization of our results. However, in our case this was inevitable, we created this study as a self-improvement and monitoring tool, before implementing routine day case rhinoplasty. Collecting detailed prospective data was judged more important than presenting results retrospectively, after implementing a procedure where no prospective trial has been done.

Also, it is a known effect that patients' answers to questions measuring their satisfaction are positively skewed,[9] a reflection of the fact that they are unwilling to criticise their carers, however, this was addressed by using validated questionnaires and comparing the results with previous studies, rather than interpreting them independently. We do not feel that the use of nasal packing influences the bleeding rate and so it is no longer performed routinely. The absence of patients requiring nasal tip work may also be a limitation as it can be argued that a large proportion of rhinoplasty patients may benefit from at least minor tip changes to address the overall balance of the nose. We decided to exclude these patients largely due to time limitations associated with day care guidelines suggesting a procedure be limited to 60 minutes, especially as trainees performed the majority of the procedures.

As our confidence and experience in performing rhinoplasty as a day procedure increases, we are currently listing all patients including those requiring simple tip work, where there are no medical contraindications, as we believe it to be a safe and effective ambulatory procedure. We are continuing to audit our results and collect prospective data.

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