Organization of day-case adenoidectomy in the management of chronic otitis media with effusion—preliminary results

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Summary
We report our initial findings of adenoidectomy performed in Leicester as a day case on 149 children between the ages of 3 and 9 years, who have been assessed for suitability for day-case surgery according to specific medical and social criteria. The selection process has been performed by ENT medical staff and a paediatric community nurse. All of the surgical procedures have been performed by experienced medical staff and the various anaesthetic techniques used by consultants or senior registrars have been documented. Six children were admitted postoperatively for overnight observation, three of whom had suffered a primary haemorrhage. No patients have been returned to theatre because of haemorrhage and there have been no re-admissions after discharge. A strict entry protocol has been observed to ensure the safety of this type of surgery and to date the acceptability of such a scheme and its organization has been widespread amongst those children and their parents who have participated.

Introduction
Adenoidectomy in the United Kingdom is performed by 45% of consultant otolaryngologists as part of the management of chronic otitis media with effusion in children. In excess of 15 000 of these procedures are carried out per year, usually involving an overnight stay in hospital, which is in marked contrast to the situation in the United States, where due to financial restrictions imposed by Health Insurance companies, day-case adenoidectomy is performed in many centres on a regular basis and has been done for up to ten years in certain States. In an attempt to alter the balance between inpatient and day-case surgery, we have established a protocol designed to try to ensure that adenoidectomy is performed as safely as possible. We report the details of this scheme and the results of the patients entered to date.

Methods
In order to be considered for the scheme, the patients must fulfil defined medical and social criteria. Medical criteria include: weight greater than 15 kg, no history of bleeding disorders and fitness for general anaesthesia. These criteria are assessed at the time of outpatient consultation and addition to the waiting list. The social criteria are assessed at a later date by our specialist paediatric community nurse during a preoperative visit to the patient's home. These include: access to a telephone, access to transport, no other family commitments on the day of surgery and the availability of a parent to be present with the child throughout the day.

Only when the aforementioned criteria are satisfied is the patient deemed suitable for surgery as a day case. However, in a number of cases it has been possible to arrange for the patient and parent to stay at the house of a relative, so that the requirements are fulfilled.

Once the selection procedure has been carried out, the patient's general practitioner is notified by letter of the forthcoming admission for surgery and also sent a copy of the advice sheet which is given to parents.

Admission and surgery
All patients are admitted to the day surgery unit at 08.00 h on the morning of surgery and all day-case adenoidectomies are carried out at the beginning of the morning list, starting at 09.15 h. Local anaesthetic cream (EMLA) is applied topically to the children's hands on arrival and visits are carried out by both anaesthetic and surgical staff. No premedications are given. In all cases, the surgery is carried out by registrar, senior registrar or consultant grades and general anaesthetics are administered by senior registrar or consultant staff, as recommended by the Health Service Commission on day case surgery for children.

A variety of anaesthetic techniques have been employed to date, including both intravenous and inhalation inductions, using either propofol or nitrous oxide and halothane respectively. Surgery has been performed both with and without endotracheal intubation using a Boyle-Davies gag. Analgesia has been given at the time of induction and has taken the form of a suppository containing diclofenac or paracetamol.

All patients have been monitored throughout anaesthesia using pulse oximetry, electrocardiography and intermittent blood pressure measurements. All the adenoidectomies have been performed by curettage and haemostasis has been effected in all cases by temporary packing of the post nasal space until the surgeon is satisfied that the bleeding has stopped. A period of recovery of approximately 15 min immediately outside the operating theatre has been employed before the patient is returned to the day surgery ward, which is situated directly adjacent to the theatre.

Postoperative care
Once returned to the day ward, the patients are observed for a minimum of 6 h, during which time
they must eat and drink prior to discharge. Immediate postoperative assessment is carried out by both the surgeon and anaesthetist and a further assessment of the patient is carried out by a member of the ENT medical staff before discharge. The paediatric community nurse also visits the patients postoperatively to arrange a 24 h follow-up visit. At the time of discharge, the parent is given an advice sheet on day-case adenoidectomy, the telephone number of the paediatric ENT ward and the telephone number of the ENT community nurse, who is available on operating days and nights by a mobile phone.

On the morning following surgery, all patients are visited by the community nurse for postoperative assessment and all patients are reviewed in the outpatient clinic at 3 months.

Results
Between September 1991 and March 1992, a total of 330 children (age range 3–9 years) were assessed for entry into the day-case adenoidectomy scheme. Of these, 242 (73%) were deemed to be suitable and after alteration of home arrangements, we were able to accommodate a further 91 patients within the protocol guidelines, making a total of 272 out of the initial cohort of children. Of the 57 patients who did not wish to consider day surgery, 43 have been under the age of 5 years and 106 were aged between 5 and 9 years.

Six children (4%) had to be admitted directly from the day ward, following postoperative complications. Three of these had a primary haemorrhage, all of which settled without the need for return to theatre. All these children were sent to the paediatric ENT inpatient ward within 3 h of surgery. Two other patients were observed in hospital overnight because of protracted vomiting and were treated with intravenous fluid replacement. One child refused to eat postoperatively and was also kept in the main ward. All the patients who were admitted because of postoperative problems were discharged the following morning. There have been no re-admissions to the hospital once discharged from the day ward. The commonest complaint at home has been sore throat in 22 children (15%). Vomiting has been reported at the first-day visit in five cases (3.4%). No children have had problems with pyrexia or failure to eat and there have been no cases of secondary haemorrhage to date. There appears to have been widespread enthusiasm for the surgery and its method of organization by both patients and their parents.

Discussion
Our preliminary experience of day-case adenoidectomy suggests that it can be carried out safely from an organized day surgery unit, subject to fairly stringent entry criteria, which encompass both medical and social factors. The idea of adenoidectomy performed as a day case is not new and in the United States it is becoming increasingly common practice, often combined with tonsillectomy. The main reason for its popularity appears to be the savings made in costs and it has been said to be approximately 50% cheaper than adenoidectomy performed on an inpatient basis.

In the United Kingdom day-case adenoidectomy is the exception rather than the rule. The main reason for this is the potentially life threatening nature of the complications, notably haemorrhage, which has been said to range in incidence between 0.1% and 8.0%.

Bleeding after adenoidectomy has been shown to be at least as common as post-tonsillectomy haemorrhage, as documented in a series of over 20,000 children undergoing adenoidectomy, tonsillectomy, or both and it occurs most commonly in the first 12 h after surgery. A more recent report suggests that the greatest number of serious complications, including haemorrhage occur within 6 h of operation and the incidence of haemorrhage between 6 and 12 h is just over half that in the first 6 h postoperatively. This would indicate that 6 h should be the minimum period of postoperative observation. In some of the day care facilities in the United States, patients are discharged to a hotel or hostel within the vicinity of the hospital rather than directly to the patients home, however the cost of this does not tend to be covered by medical insurance companies. In most departments however, including our own, all patients undergoing day-case surgery are discharged to their own home environment or to that of a relative, which makes the need for a strict entry protocol all the more important.

In an attempt to minimize the risk of serious complications, we have followed selection criteria observing medical factors suggested by others, such as good general health of the patient and no history of bleeding disorders, although routine blood profiles and clotting studies are not mandatory as is often the case in the United States. We have emphasized social pre-conditions for day-case surgery to ensure that support is provided for the patient after operation, both in the day surgery unit and at home. Our approach to this assessment relies on observations carried out 'in the field' by our community nurse, pre- and postoperatively. In addition, we have established the minimum postoperative observation at 6 h in accordance with the literature.

In trying to organize as safe a service as possible however, we have found that when day care and inpatient stays are compared for this procedure, there is very little financial saving; but as overnight stay is avoided, inpatient beds previously filled have been available for other paediatric ENT surgery. It would appear that the main benefits of adenoidectomy performed as a day case are for the patients themselves and their parents in terms of convenience, as it offers a shorter hospital stay and a more rapid return to their normal environment.

Although we have reported only a small series of patients undergoing day-case adenoidectomy in Leicester, we have followed an organized entry protocol for the scheme and have tried to emphasize postoperative support for both patients and guardians, in medical and nursing terms. We feel that such a service is advantageous, mainly for the children themselves if formally arranged and we shall continue to audit future patients involved, to confirm the safety and efficacy of this treatment.

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