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Paediatric day care surgery: a hidden burden for primary care?

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The aims of this study were to identify prospectively 'concealed' postoperative problems, to assess the burden of paediatric day care surgery on primary care services and to define a normal recovery period for common children's procedures. At their first postoperative clinic visit, patients and parents were asked directly about postoperative problems, unscheduled contacts with the hospital or other health professionals, and the time taken to resume normal activity and return to school.

A total of 651 children, median age 4 years (range 0–16 years) were included. Median time to the first clinic appointment was 42 days (range 4–235 days). There were 100 unscheduled postoperative contacts (15.5% of all episodes) of which 81 were with general practitioners. Most problems recorded were relatively minor, and most requiring major intervention were identified before the child left hospital. There was a very high incidence of wound related problems after circumcision. Most children were 'back to normal' within a few days (median 2 days, range 0–30 days) and back to school within a week (median 6 days, range 1–20 days).

There was a high rate of primary care contact despite clear written and verbal advice given in hospital and the offer of open access for any concerns. Recovery from day care surgery was rapid and overall level of patient satisfaction was high.

Key words: Day care – Postoperative complications – Primary health care – Children – Audit

Ambulatory surgical care has many advantages,[1] but does reduce postoperative communication between surgeon and patient. For the surgeon this can lead to reducing awareness of normal patterns of recovery and early postoperative problems with transfer of care to primary health care or community services. It has been long recognised that day surgery does increase primary care workload with training as well as funding implications[2] and recent studies have shown that 16.7% of adult patients consulted their general practitioner in the week after day surgery,[3] and 50% in the first 3 weeks.[4]

It was the aim of this study to record all unplanned postoperative contacts with the surgical wards, general

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Table 1 Procedures and unscheduled postoperative contacts

	Total	Unplanned overnight stay	Later unscheduled contact				Contact problem		
			Total	%	GP	Ward	Wound	Other	Inter-vention
Prepuce	112	2	30	(27%)	21	9	24	6	11
Inguinal hernia/hydrocele	241	2	26	(11%)	24	2	17	9	5
Undescended testis	111	2	15	(14%)	12	3	11	4	5
Umbilical hernia	57	1	9	(16%)	8	1	6	3	3
Other	130	4	20	(15%)	16	4	12	8	8
Total	651	11	100	(15%)	81	19	70	30	32

GP = general practitioner.

practitioner or community services, following children's day surgery, and to determine how long it took children to return to normal activity and school.

Methods

Children undergoing day case surgical procedures with routine postoperative outpatient clinic review were considered eligible. On the day of operation, parents were given verbal advice and simple written information specific to the operative procedure and a routine outpatient appointment arranged. They were invited to make direct contact with the surgical ward for advice or for their child to be seen before the planned appointment if they had any concerns. The only specific exclusions were patients for whom planned contact was arranged either at home or hospital before the outpatient clinic visit. At the postoperative clinic visit, the patient and parents were asked about any postoperative problems or concerns, any unplanned direct or telephone contacts with the hospital, general practitioner or other health professional, and about how long they considered it took to get back to normal after the operation. The information was recorded on a simple form in the clinic, by the consultant or specialist registrar seeing the child (Fig. 1).

Data were analysed using the EPI INFO software programme.

NAME _____

DoB ___ /_____ /___

CONSULTANT AMB MD LR JW

CLINIC DATE ___ /_____ /___

OPERATION

Date operation ___ /_____ /___

Circumcision < >

Hernia/Hyrdocele < >

Undescended testis < >

Other < > specify: _____

COMPLICATIONs

No complication < >

Wound infection < >
(0, 1 = red, 2 = discharge, 3 = pus)

Other complication < > specify: _____

CONTACT POSTOP

Seen on ward ___ times postop day ___

Seen by GP ___ times postop day ___

Seen HV/DN ___ times postop day ___

Reason _____

RECOVERY

return to 'normal' ___ days

return to school ___ days

school holidays Y / N

Figure 1 Suggested record form

Results

Information was returned for 651 children who had day surgery in a single paediatric surgical unit between November 1994 and August 1997. Median age at operation was 51 months (range 1 month to 16 years). The children were reviewed in the outpatient clinic at a median of 42 days (range 4–235 days) postoperatively.

The procedures undertaken and incidence of unscheduled postoperative contacts are indicated in Table 1. The unspecified procedures included 43 operations for skin and benign connective tissue lesions, 28 hypospadias repairs, and some were multiple procedures.

Eleven patients stayed overnight on the day of operation: three because of vomiting, three with urinary

Table 2 Return to normal activity

Operation	Return to normal activity (days)			Return to school (days)		
	n	Median	Range	*n*	Median	Range
Prepuce	106	5	(0–30)	58	7	(3–20)
Inguinal hernia	235	1	(0–21)	86	7	(1–14)
Undescended testis	105	3	(0–28)	42	7	(3–14)
Umbilical hernia	54	2	(1–14)	24	7	(3–14)
Other	120	2	(1–14)	43	3	(0–16)

n = number of observations.

retention, two with bleeding, two because of unexpected extent of pathology or procedure and one because of parental concern alone.

After leaving hospital, there were 100 unscheduled postoperative contacts, 81 with a general practitioner and 19 with the surgical ward. Hospital contacts were earlier than general practitioner contacts (median postoperative 3 days, range 1–21 days compared with median 7 days range 1–35 days). Most of the contacts were related to concerns about the surgical wound and no more than reassurance was required. Only in 32 cases (5%) was a significant intervention recorded: seven re-admissions with four of these undergoing re-operation, 16 antibiotic prescription, four other prescription, four removal of sutures or dressing, and one chemical cautery of granuloma. There was a particularly high rate of contact following prepucial procedures, with many parents surprised and concerned despite warnings to expect swelling and crusting. Of the seven patients re-admitted, two had bleeding after circumcision, two had retention of urine after hypospadias repair, one had paraphimosis after release of prepuce adhesions and orchidopexy, one had a chest infection after inguinal herniotomy and one had traumatic disruption of a superficial wound over the patella.

Normal recovery times, as estimated by the parents, are shown in Table 2. Within 7 days, 91% were 'back to normal' and 99% within 14 days (620 observations). 73% were back at school within 7 days and 99% within 2 weeks (253 observations).

Discussion

The data show a high rate of contact with general practitioners after day surgery in children, similar to the incidence reported in adults.[3] Most of these contacts were related to problems requiring only re-assurance rather than therapeutic action, and could be regarded as within the normal range of recovery. The most common example was scabbing and swelling after circumcision. Most problems requiring significant intervention were evident before discharge from hospital on the day of surgery and dealt with accordingly.

This was a representative sample of the departmental practice. The recorded episodes expressed as a fraction of the total expected for the department over this time were 21% for prepucial procedures, 25% for inguinal hernia/hydroceles, and 21% for undescended testes. This consistency, together with data returned from individual clinics tending to be an all-or-nothing phenomenon, suggests it is reasonable to assume that the sample is effectively random. No patients were identified from other sources, such as morbidity records, to avoid bias in patient selection. Although absolute numbers of complications or postoperative contacts are not given, this study clearly identifies a problem considerably greater than is generally assumed.

Some consider it appropriate to routinely involve community services postoperatively.[5] This might reduce unscheduled contacts, but at the expense of greatly increased planned contacts and with significant resource consequences. In this study, general practitioner contacts occurred much later and were often for very minor problems, which suggests the gain from regular early home visits would have been slight. It may be possible to reduce unscheduled contacts by planned outpatient review within the first postoperative week, although later follow-up for many of these procedures, such as orchidopexy, is more desirable. Better parent/patient education with use of photographic or videotape media may also help to alleviate unnecessary anxiety.

Normal recovery times are often assumed, but not assessed objectively or published. The times to return to normal and return to school in this study also help to give both parents and health care workers a much clearer picture of what to expect after day surgery.

Rigorous community surveillance does reveal hidden postoperative complications.[6] Very few of the patients or parents in this study volunteered information about resolved postoperative problems or

general practitioner contacts until asked directly. They may have put their troubles behind them or perhaps did not like to upset their surgeon. True complication rates reflect the rigor with which they are sought as much as standards of surgical practice.

The high rate of primary care contact re-inforces the need for all patients/parents to hold accurate written information about their operation when they leave hospital.

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