

Is Routine Hospital Visit after Day Case Inguinal Hernia Surgery in Children Necessary?

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ABSTRACT

Background: To observe the prospects of day case inguinal hernia surgery in children without routine post-operative hospital visits. The aim was to assess the advantages, acceptability and safety of this change in practice in low resource country like Nepal.

Methods: This was a cross-sectional study in a tertiary care general teaching hospital. Thirty children aged 6 months to 14 years who had elective day case Inguinal Hernia surgery from May 2011 to Oct 2011 were prospectively observed. Children with obstructed hernia, un-descended testis were excluded. Parents were counseled for omission of routine hospital visit after surgery. Main outcome measures were to observe unplanned hospital visit, reasons for visit, post-operative pain, wound infection and overall satisfaction of parents interviewed by telephone. Study was approved by institutional review committee.

Results: There were 28 boys and two girls. Average age was five years. Right Inguinal Hernia patients were 19 in number while 11 patients had left sided hernia. None of the children visited health facility for pain or wound problem. Two children were brought to outpatient because they were mistakenly given appointment slip. Mother noticed recurrence and brought one child to surgical outpatient. All 30 parents responded to telephone enquiry and were satisfied.

Conclusions: Routine follow up visit after day care Inguinal Hernia surgery in children is not necessary. This practice is safe, economic and well accepted by children and parents.

Keywords: children; day case surgery; follow up; herniotomy; inguinal hernia.

INTRODUCTION

Prevalence of inguinal hernia (IH) is 0.8% to 4.4% in full-term delivery and as high as 30% in premature children.¹ Technically the surgery is straight forward but the stress, hospital phobia and white-coat syndrome are important factors in case of children.² Day case herniotomy is established practice in developed countries and is increasingly accepted in resource poor countries for the obvious benefits to children, family and community.^{3,4} Complications of vas injury, recurrence, testicular atrophy or hydrocele are uncommon and not evident during routine early postoperative visits.⁵

Tradition of routine postoperative visits in surgical clinic is debatable due to the rarity of morbidity observed immediately after surgery.^{4,6} Detail postoperative instructions and open access for parents to bring their child to hospital when required is as effective and safe as routine visits.⁷⁻¹² Selective follow up seems more evidence based. This reduces stress of unnecessary hospital visits of children. Also, parents are free to care of other children at home and hospital resources are better utilized for needy children.

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In this observational study our aim was to find out acceptance and feasibility of not asking parents to routinely bring their children for follow up in outpatient surgical referral clinic (SRC) after elective day case IH surgery.

METHODS

A prospective cross sectional study was conducted in the Department of Surgery of Patan Hospital from May 2011 to Oct 2011. Total 30 children in-between 6 months to 14 years were included in the study. These children had elective day case IH surgery in Unit-2 department of surgery Patan Hospital, Patan Academy of Health Sciences. Children with obstructed hernia, un-descended testis and those requiring admission after surgery for various reasons such as drug allergy, anesthetic complications, persistent vomiting were excluded. Parents who did not have valid telephone contact number or did not give consent were also excluded from the study. Ethical approval was obtained from institutional review committee, Patan Academy of Health Sciences, Kathmandu, Nepal.

Written informed consent was taken from parents and older children were explained about surgery with no requirement of hospital admission.

In SRC, parents were counseled in detail with verbal and written instructions on pre-operative fasting, operation schedule and surgery. Herniotomy was arranged early in the list to minimize fasting time and facilitate recovery in time so as children could go home early after the day surgery. Parents were explained that on returning home they will be provided with oral analgesic to manage pain, children could be fed normally as tolerated and there will be no need of dressing change or stitch removal. Parents were instructed to remove dressing after three days leaving wound open and start bath after five days of operation. Parents were assured that they could visit hospital (SRC or emergency department) in case of excessive pain, swelling, redness or discharge at the wound site or if they felt concerned. Parents were counseled that ‘a doctor from hospital will contact them by phone during first week of surgery to enquire about the condition of wound and overall recovery of children’ (Table 1, 2). One resident doctor familiar with the study was designated for the structured telephone interview.

Herniotomy was performed through inguinal skin crease incision by experienced consultant surgeon or by registrar under supervision. Operation was conducted under intravenous anesthesia (Atropine 0.01mg/kg, Ketamine 1mg/kg) with face mask without intubations. Chromic catgut 3/0 was used for high ligation of hernia sac. The distal sac was left in situ after widening the mouth by longitudinal slit to prevent collection and formation of ‘hydrocele’. Bupivacaine 0.5% (1 ml for

child less than 10 years of age and 2 ml in older children) diluted in equal amount of water for injection was used to infiltrate wound before closing with subcutaneous catgut 3/0. Paracetamol (15 mg/kg) rectal suppository was given in recovery area adjacent to operating room. Children were handed over to parents once awake and observed further till fully conscious and able to tolerate liquid orally.

Before allowing the child to leave hospital, oral Paracetamol suspension for smaller children (below 10 yr) and tablets for older children (above 10 yr), in the dose of 15 mg/kg three times a day was prescribed for post operative analgesia. Parents were explained that the pain at wound site ‘should gradually decrease to minimal in 2-3 days and virtually no pain after one week’ and expect some ‘hardness’ at scar site that will soften in about 3 to 4 months. Recovery room staff briefed parents about analgesic, oral diet, wound care and need of follow up. Instruction leaflets in English and Nepali were also given.

Data on age, sex, side of hernia, post operative visit (to local medical facility or Patan Hospital), wound complications, and overall satisfaction of parents were recorded prospectively in a predesigned proforma. Microsoft Excel was used for descriptive analysis.

Table 1. Home instruction leaflet (also in Nepali) given to parents after day case inguinal hernia (IH) surgery in children (n=30).

- A. Home instruction
 1. Give the medication asml/tab....times per day fordays.
 2. Use tight underwear to support scrotum.
 3. No food restriction.
 4. Remove dressing after 3 days and leave the wound open.
 5. No need to take out stitches.
 6. Can take bath after 5 days.
 7. Pain will be decreased by 3rd day and minimal or no pain after 1 week.
 8. There will be some hardness over the scar and will soften in 3 to 4 months
- B. You don’t need to bring child for routine follow up after surgery. One doctor will contact you by telephone within 5-7 days after surgery. Visit Patan Hospital (or nearby medical center) if
 1. Child has excessive nausea, vomiting or cannot tolerate orally.
 2. Excess pain, swelling, redness or discharge from wound.
 3. Excessive scrotal swelling.
 4. Child cries excessively without obvious reason.

Table 2. Questionnaire for telephone interview to parents after day case IH surgery in children (n=30).

1. Have you visited local medical center?
2. If yes then for what: pain, wound or other concern?
3. Did you notice these wound conditions, complications-
 - a. Redness
 - b. Swelling
 - c. Pain despite of analgesic
 - d. Discharge
 - e. Other concern
4. Have you visited Patan Hospital OPD or Emergency for any problem?
5. Did your child get admitted post-operatively?
6. Are you satisfied with our services?

RESULTS

There were 28 boys (93%) and 2 girls. The average age was 5.1 years, range 1 to 11 years. Majority of children were in age group up to 1 to 5 years (Table 3). Right IH were 19 (63%) and left sided 11 (37%). All 30 parents responded to the questionnaire by telephone. None of the parents had visited local medical shop or health facility for want of pain relief or wound complications (Table 4).

Table 3. Age distribution of children (n=30) with IH who underwent day care surgery without routine follow up visits.

Age group years	n	%
0-1	1	3.33
>1-5	16	53.33
>5-10	12	40.00
>10-14	1	3.33

Table 4. Findings of telephone inquiry after day care IH surgery in children (n=30).

Parents response	N
1. Did you seek medical help locally for pain for wound for concern	0
2. Did you observed wound and found redness swelling discharge	0
3. Did you have unplanned hospital visit within one week*	1
4. Were you satisfied, will recommend to others†	29

*One unplanned visit to hospital emergency on 5th day after surgery was due to viral fever and was discharged home after medication.

†Mother noticed swelling 6 w after surgery. This recurrent hernia was successfully repaired as day care. Mother was unsatisfied due to want of 2nd operation.

There was one recurrence noticed by mother six weeks after surgery. This child was brought to SRC and successfully repaired on day case basis. Two children were brought to SRC because the recovery room staff mistakenly gave follow up appointment slip. This was in the beginning of study. One unplanned visit was for a child brought to emergency on 5th postoperative day for viral fever. This child had no surgery related complications. All parents expressed satisfaction during telephone enquiry about the overall management of children at home. There was no readmission.

DISCUSSION

We had no complications requiring unplanned hospital visit in this series. All children were cared satisfactorily by parents at home after day case hernia surgery. Studies have shown that despite unfavorable circumstances of bad roads and transportation in developing countries parents prefer day case hernia surgery to minimize hospital admissions and multiple visits.^{4,13} In our series none of the parents visited hospital simply for ‘concern’ of complications. The usual concern for pain, feeding and need of hospital visits after surgery can be effectively addressed by detail explanation and instruction leaflet. Parents were detailed that there was no need of stitch removal. Assurance that minor complications following elective IH surgery in children are uncommon and can be effectively detected by parents was helpful to gain confidence of parents. Wound complications are rare occurring in less than 1% after inguinal hernia surgery.^{4,6} Detail counseling in outpatient department and again before discharge together with home instruction leaflets were effective for parents in our study.

The traditional routine follow-up in immediate post operative period after IH surgery do not detect conditions like development of hydrocele or hernia on same side or contra lateral side. The main purpose of the routine postoperative visit is parental re-assurance which can be achieved by detail counseling as we observed in this study. Additionally, the assurance to parents that they can visit hospital to seek consultation when they wished was effective. The fact that parents noticed ‘something’ unusual in groin to seek consultation ‘for hernia surgery’ in the first instance should be assuring to clinician that parents will be better prepared and confident to selectively bring their child to hospital as they are more knowledgeable after explanations of surgery and complications.^{4,6,9,10} Postoperative blood flow, testicular perfusion and size of testes is not affected after open or laparoscopic IH surgery in children as observed in up to six months follow up period.^{14,15}

There was one recurrence in present series. This was noticed and brought to SRC by mother six weeks after

surgery. Child was successfully re-operated as day case surgery. This important outcome measure of hernia recurrence is rare during routine follow up within one week. In a study with 50-year follow-up of hernia repair in 213 patients (252 repairs, 33 bilateral and 6 sequential contra laterals) found repeat groin surgery in 8.4%, contra-lateral operations in 6%, and chronic pain in 3% and infertility in 5%.¹⁶ Routine follow up adds demand on resources of health institutions. Also, there is inconvenience to children and parents, increased anxiety to child for hospital visits. Counseling for selective follow up later when there is occurrence of testicular malposition, atrophy, contra-lateral hernia, hydrocele or recurrence is more evidence based than compulsory and routine follow up. These conditions are detectable by parents (and older children) to seek consultation when needed. In our study mother noticed recurrence in one case and brought her child in SRC after 6 weeks.

After the encouraging outcome of present study we have now changed our practice and do not schedule for routine postoperative follow up within a week of hernia surgery as has been the tradition. Also, we have omitted telephone enquiry. This study shows that detail counseling before surgery, post-operative briefing by operation room staff and information leaflets on home care combined with assurance that child can be brought to outpatient or emergency when parents' wishes so is assuring, safe and as effective as routine follow up. This change in practice of day case hernia surgery without routine followup have benefit to reduce the already strained resources of public hospital for beds and number of outpatient consultations. Omission of routine visits without compromising the overall outcome of surgery is a great relief for both children and accompanying parents.

We did not categorically calculate the actual 'economic' benefit to patient and health institutions. However, given the fact parents did not have to routinely bring their child to hospital or seek medical help outside hospital does explain that there is definite economical advantage to both parents and institutions. From health institute point of view, resources can be better channelized to more needy and serious patients.

The limitation of this study is small sample size. The reason we did not feel the need to continue recruitments of more children was the encouraging result and satisfaction of parents. Also in our earlier study in 100 consecutive day case hernia surgeries in children at our institutions we did not find any detectable post-operative complications within one week of routine follow up visit as has per traditional practice.⁴

The new knowledge added by this study-day case IH surgery in the children is safe in low resource country; routine immediate follow up within a week after IH surgery in children can be safely omitted; omission of routine follow up after IH surgery in children is well accepted by parents.

Possible implications of this study in clinical practice-omission of routine follow up after day case IH surgery in children will decrease burden to parents; free hospital beds and minimize psychological stress to children; free parents to better utilize their time at home to take care of other children; free parents to manage their routine day to day life and work; free hospital resources to be channeled for more needy outpatients.

CONCLUSIONS

Routine follow up visit after day case IH surgery in children is not necessary. This practice is safe, economic and well accepted by parents and children. Parents were satisfied with omission of routine early follow up visits.

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CONFLICT OF INTEREST

No benefits in any form have or will be received from a commercial party or others related directly or indirectly to the subject of this research.

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