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PAEDIATRIC LAPAROSCOPIC SURGERY IN ILORIN: THE NEEDS AND THE ADVANTAGES

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Abstract

Introduction

The improvement in instrumentation and proficiency of the surgeons has increased the list of indications for laparoscopic surgery in developed countries even in the paediatric age groups. In spite of the arguments for the risk of the procedure possibly from prolong exposure to anaesthesia, the advantages are undisputed.

Objective

Evaluation of cost benefits of laparoscopic surgery in the children in a third world tertiary health centre.

Patients and Methods

Prospective collection of data on children who had laparoscopic procedure for diagnostic and therapeutic purposes in the newly introduced minimal access surgery scheme between July and December 2009 at tertiary health centre in the north-central geopolitical zone of Nigeria.

Results

There were 14 children, 8 males and 6 ambiguous genitalia cases. The ages ranged between 2 months and 8 years with a median of 24 months. All twenty four had diagnostic and interventional laparoscopic surgery as a single stage. There was no complication; length of stay was 5 days for bilateral orchidopexy and 9 days for genital reconstruction cases.

Conclusion

Paediatric laparoscopic surgery has a therapeutic impact in current practice. Multiple surgeries, repeated anaesthesia and admission were avoided in these patients with eventual reduction of cost to the parents.

Keywords: Paediatrics, laparoscopy, minimal access surgery, undescended testis, orchidopexy, intersex, cost

Introduction

The improvement in instrumentation and proficiency of the surgeons has increased the list of indications for laparoscopic surgery in developed countries even in the paediatric age groups.^{1,2} In spite of the arguments for the risk of the procedure possibly from prolong exposure to anaesthesia, the advantages are undisputed. We use our initial cases to evaluate the cost benefits of laparoscopic surgery in children in a third world tertiary health centre.

Patients and Methods

Prospective collection of data on children who had laparoscopic procedure for diagnostic and therapeutic purposes in the newly introduced minimal access surgery scheme between September and October 2009 at tertiary health centre in the north-central geopolitical zone of Nigeria. The

control group were children of similar age group who had conventional treatment for orchidopexy and genital reconstruction cases. The two groups were compared for stages of procedures done, duration of stay in hospital as well as complications of surgery.

Results

There were 14 children, 8 males and 6 ambiguous genitalia cases while the controls had 12 children, 7 males and 5 ambiguous genitalia. The ages ranged between 2 months and 8 years with a median of 24 months while for the control group, the ages ranged from 2 months to 8.4 years. All fourteen had diagnostic and interventional laparoscopic surgery as a single stage while all two of the 7 (28.6%) cryptorchidism cases required second stage procedures or further abdominal exploration ($p < 0.005$) and 2 out of 5 (40%) ambiguous genitalia cases required more than one stage. procedures ($p < 0.05$). There were no complications in the study group while the 6 out of the control

group had minor complications. Average length of stay was 3 days for the laparoscopic group while it was 5 days for the conventional treatment group($p<0.005$) among the bilateral orchidopexy cases and 6 days for the study cases and 9 days for conventional genital reconstruction cases($p<0.005$).

Discussion

Modern day surgery has audited the practice in terms of safety and economic input with a view to having a cost effective management. Minimal access surgery especially laparoscopy has found great use in the adult population and is now being applied to paediatric patients at increasingly younger ages and for increasingly complex procedures because of its proficiency and ability to reduce morbidity and mortality.¹⁻⁴

The value of paediatric laparoscopic surgery is uncountable; it is feasible in the developing countries for diagnostic and therapeutic purposes if properly pursued.

Imaging studies have little role in the diagnosis of cryptorchidism because of the unacceptable false-positive and false-negative rates. Diagnostic laparoscopy is the most reliable, effective and efficient modality to identify a nonpalpable intra-abdominal testis. Laparoscopy can be performed in conjunction with definite therapy (laparoscopic orchiopexy or open orchiopexy). Laparoscopic findings can be helpful in determining the need for inguinal exploration, for deciding between 1-stage and 2-stage repair, and for assessing viability of the gonad.⁵⁻⁶ Findings from laparoscopy can also help clarify the anatomy in complex intersex cases.

The study has shown how doubtful radiologic diagnoses have been resolved and surgical interventions expedited with reduce morbidity to the patients (figure 1 and 2). Patients have often had mini-laparotomy to confirm the internal genitalia in the cases of intersex in the subregion and in our centre because of non availability of laparoscopic surgical facilities for paediatric age group.⁷⁻

⁸ This is done as a multi-staged procedure often with definitive surgery differed to another period.

The cases of the bilateral crypto-orchidism were confirmed easily with the laparoscopic technique and surgical intervention was possible at the same sitting. The non-availability, cost and delays in retrieving diagnostic hormonal assay (many times not locally assayed) has often frustrated practitioners and the parents.

The high cost of multiple surgeries, repeated exposure to anaesthesia with its attendant risks and repeated admissions were avoided in these cases done with laparoscopy. The duration of admission included pre-operative days for anaesthetist's evaluation. None of the patients required blood transfusion because groin and open abdominal exploration were avoided and resultant ugly scars were avoided (figure 1).

Conclusion

Paediatric laparoscopic surgery has a therapeutic impact in current practice and reduces eventual cost on the patients.

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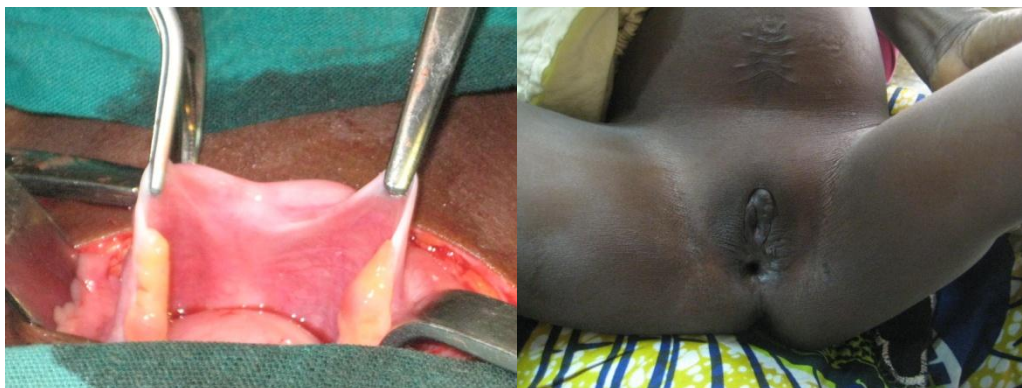


Figure 1: a. wide incision in mini-laparotomy to explore for internal genitalia in a case of suspected congenital adrenal hyperplasia. B. ugly laparotomy scar post-op.



Figure 2: tiny wounds for the port of the laparoscopic instruments.