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COMPARATIVE STUDY ON CAUDAL AND GENERAL ANAESTHESIA FOR PATIENTS UNDERGOING ANORECTAL SURGERY

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Summary

The objectives of this study are to compare caudal analgesia supplemented by sedation with general anaesthesia technique and to study the relative safety and difficulties of each technique on the patient and its benefit. A prospective study on 90 patients was performed. These patients required anorectal surgery within a period of 6 months from May-Nov. 1998. Divided into 2 groups, there were 45 operations performed under CA, and 45 operations under GA at King Hussein Medical Centre (KHMC) and Prince Hashim ben Al-Hussein Hospital (PHH) RMS JA Forces. General anaesthesia group showed uneventful course, but at the end of surgery restlessness during recovery was seen in 10 patients, demand for analgesia in 70% patients which was particular to that group. Caudal anaesthesia group: absolute failure to institute the block occurred in 4 patients in whom general anaesthesia was given. Relative difficulties were encountered in 3 patients, but the block was complete after repeated trials. O_2 commenced at a rate of 4 liters/minute through oxygen mask was needed for 3 cases of mild respiratory depression. Table II showed anaesthesia for various operations and the sex distribution. The view of the patients in regard to the technique employed is demonstrated in Table III and in regard to the post operative pain is shown in Table V. Caudal anaesthesia was a useful technique when supplemented by intravenous sedation which gave sedation during the operation period and delayed onset of post operative pain.

Introduction

Caudal analgesia for ano-rectal surgery was a neglected method. Recent interest in its analgesic properties, and the avoidance of all the complications of general anaesthesia stimulated us to reevaluate its application.

During the last six months, a prospective comparative randomized trial between caudal and general anaesthesia to study the acceptability of the technique by the patient and its benefit.

There were 45 operations under general anaesthesia and 45 operations under caudal anaesthesia. Fourteen percent failure rate was observed in the caudal group, 5% needed general anaesthesia, 10 % either difficult anatomy or more than one cause.

Blood pressure reduction more than 30mmHg below the pre anaesthesia was recorded in 4 patients (5%).

Asking the patients about their views in regard to the technique employed, we found

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that caudal was of equal acceptance to general anaesthesia in the male group but less in the female group.

There is no statistical difference between the groups and in regard with the post-operative pain; caudal groups showed statistical difference in regard to lower post-operative pain.

Patients and Methods

A prospective study on 90 patients was performed. These patients required anorectal surgery within a period of six months from April-October 1998.

Ninety consecutive proctologic operations were performed at KHMC and Prince Hashim ben Al-Hussein Hospital (RMS.JA forces). On admission, a complete check up and a full history routine, laboratory tests and a chest x-ray were done.

	No. of patients
Haemorrhoidectomy	30
Fissurectomy, sphincterotomy	20
EUA	10
Perianal abscess	10
Fistuloctomy	10
Pilonidal sinus	10
Total	90

Table I. Patients treated for anorectal problems.

All patients received pre-medication of 1 mg/kg I/M pethidine and 0.6 mg atropine. The patients were allocated into two groups. Informed consent including full explanation of the procedure was obtained on the night before surgery.

In the anaesthetic room, pre-operative basic recording of blood pressure, heart rate and respiratory rate was done then rechecked at intervals of 5 minutes. Intravenous line was established for each patient.

The general anaesthesia group:

Induction was performed with Fenyanyl 100mcg, and intravenous sleeping dose of propofol 2mg/kg or thiopentone 5 mg/kg [250-300mg]. Intubation performed after giving suxamethonium 1mg/kg then the patient was maintained with N_2O, O_2 6;3 Halothane 0.5% or isoflurane 0.5%, IPPV with a muscle relaxant using atracurium 0.5mg/kg. At the end of surgery neostigmine 0.06mg/kg + atropine 0.03mg/kg-1 were given to antagonize the muscle paralysis [reverse]. Patients were in lithotomy position [majority] some were in prone position.

In caudal group:

After positioning the patient in left lateral position [majority], with shoulders and knees flexed, or prone position, where the patient is placed prone on a surgical bed flexed in such a way that the patient's head and legs are lower than the hips. The sacral area cleaned with antimicrobial solution, and with a sterile technique the sacral cornua were identified, a 22 gauge 2-inch needle is inserted perpendicular to the skin until the ligament is encountered [noted as an increase in resistance] the needle then was lowered from 90 degrees to an angle of 45 degrees to the surface of the skin and advanced through the ligament, on piercing the sacrococcygeal ligament the needle is lowered parallel to the skin and advanced to the sacral canal 2-3cm.

Aspiration test was done to verify that the dural sac was not punctured. A test dose of local anaesthetic was injected then followed by 20 ml of 1% xylocaine and 10ml of 0.5% bupivacaine, opposite spray was applied after withdrawal of the needle.

Sedation [midazolam 3-5mg] was given to keep the patient sleepy and cooperative. Re-checking vital signs was done at 5 minutes intervals.

Results

Ninety consecutive ano-rectal operations were performed, ASA classification was 1 or 2, age ranging from 18-50 years. Post operative patient's opinion in regard to post operative pain [severe, moderate, discom-fort, or little pain] was recorded.

The patient's acceptance of the method employed were recorded [excellent, good, fair, bad (poor)].

Operation	GA	LA	M	F
Haemorrhoidectomy	15	15	20	10
Fissurectomy				
Sphincterotomy	8	12	8	12
Sigmoidecscopy				
EUA	5	5	4	6
Fistulectomy	6	4	7	3
PNS	5	5	6	4
Perianal abscess	6	4	8	2
Total	45	45		

Table II. Anaesthesia for various operations, and the sex distribution.

The view of the patients in regard to the technique employed is demonstrated in table III as follows:

	Ca	GA
Excellent	15	10
Good	20	20
Fair	5	10
Poor	5	5

Table III.

	LA		GA	
Male	36	80%	8	20%
Female	9	20%	37	80%
Total	45		45	

Table IV. Sex distribution.

	Ca	GA
Severe	0	10
Moderate	0	15
Discomfort	30	15
Little pain	15	5
Total	45	45

Table V. Patients view in regard to post operative pain.

Discussion

Anorectal procedures may present a formidable task to the anaesthetist, the procedures may take varying length of time, some short some long and may produce excessive reflex stimulation even under deep inhalation anaesthesia, cardiovascular changes and laryngeal spasm may occur during anaesthesia.

Position of the patients may vary, some surgeons prefer to operate on a patient in lithotomy position, some feels that prone position give better exposure and operating conditions.

Although general anaesthesia is tolerated well and even preferred by patients, local techniques can be an alternative and if given with great skill, they should be accepted by patients.

Giving local anaesthesia should not prevent sedating the patient if he or she wishes to be asleep during the operation. With caudal, like any other epidural analgesia some sympathetic block should be expected, any reduction in blood pressure should be treated by intravenous fluids and /or sympatho-mymetics.

Failure rate was 14% which in our opinion is due to anatomical abnormalities, 3 cases were successful after repeated attempts to block. This failure rate was comparable with reported rate in literature.

In conclusion, caudal analgesia compare favourably with general anesthesia and gives even better analgesia in the post operative period.

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