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Regional Versus General Anaesthesia:Which is Safer for Performing Dilatation and Curettage: A Retrospective Study in A Rural Set Up.

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Abstract
Introduction: *The relative safety of dilatation and suction curettage performed for various reasons with either local or general anaesthesia has not been clearly established.*
Material and methods: *Seventy five participants of SGT University including anaesthesiologists, gynaecologists, surgeons and paramedical staff were given a structured questionnaire regarding preference of regional or general anaesthesia for minor gynaecological procedure of D and C and finding the most preferred reason for a particular technique or the for its non preference.*
Results: *Mostly gynaecologists were in favour of general anaesthesia, surgeons and anaesthesiologists preferred regional anaesthesia. In a nutshell, it was found that the reason for preference of a particular technique, regional or general depended more on the condition of the patient and individual preferences of practioners. Our study may have a significant impact on the quality of anaesthesia and subsequent pain management in patients undergoing D and C.*
Conclusion: *Key factors that influence the choice of anaesthesia include availability, effectiveness, safety, side effects and costs. Other factors include patient preference, practitioner choice, facility resources and medical indications. Keywords: Local, general, anaesthesia.*

I. Introduction

"For all the happiness mankind can gain is not in pleasure but in rest from pain"- John Dryden.[1] The International Association for the Study of Pain defines pain as an "unpleasant sensory and emotional experience associated with actual damage or potential tissue damage or described in terms of such damage".[2] From time immemorial, attempts were made to relieve the pain of surgical intervention by various means. Dilation (or dilatation) and curettage (D&C) refers to the dilation (widening/opening) of the cervix and surgical removal of part of the lining of the uterus and/or contents of the uterus by scraping and scooping (curettage). It is a therapeutic gynaecological procedure as well as the most often used method of first trimester miscarriage or abortion.[3-5]

D&C normally refers to a procedure involving a curette, also called sharp curettage.[6] However, some sources use the term D&C to refer more generally to any procedure that involves the processes of dilation and removal of uterine contents, which includes the more common suction curettage procedures of manual and electric vacuum aspiration.[7] The relative safety of suction curettage abortions performed with either local or general anaesthesia has not been clearly established. The aggregated major reasons for preference and complication rates for the two techniques were similar, but there were significant differences between local and general anaesthesia for specific complications and treatments.

Most D and Cs are done under general anaesthesia. The procedure is typically very short, and general anaesthetic can be quickly reversed, with the patient going home later the same day. Some patients prefer or require spinal or epidural blocks, but these forms of anaesthesia take more time for the anaesthesiologist to perform and require more recovery time for the patient.[8,9] Occasionally, in a very motivated patient, the procedure can be done under a local anaesthetic with or without intravenous pain medication or twilight sleep. Overall, the choice of anaesthetic is a generally determined by the surgeon, the anaesthesiologist, and the patient.[10]

II. Material and methods

After obtaining permission from the institutional ethics committee, a retrospective cross sectional study was conducted among the gynaecologists, surgeons, anaesthesiologists, OT technicians, nursing staff and junior residents of SGT medical college. All these personnel had some knowledge of the procedure as well as its related complications and the options available for anaesthesia and postoperative pain management.

All subjects were given same sheet containing reasons for preference of a particular technique of anaesthesia. To allow for an unbiased study, questionnaire was prepared by a separate anaesthesiologist and sheets were distributed and survey conducted by a different anaesthesiologist. A separate anaesthesiologist answered any queries and explained the staff of the procedures and aims behind our survey.

Appropriate statistical test applied and "p" value <0.05 was considered as stastically significant.

Table 1: Indications for dilatation and curettage that were included	
1.	Perform abortion in early months of pregnancy (missed or septic abortion)
2.	Removal of lost intrauterine contraceptive device
3.	Evacuation of Retained products of conception (ERPOC)
4.	Molar pregnancy
5.	Treat inter-menstrual bleeding
6.	Investigate the cause of infertility

Results

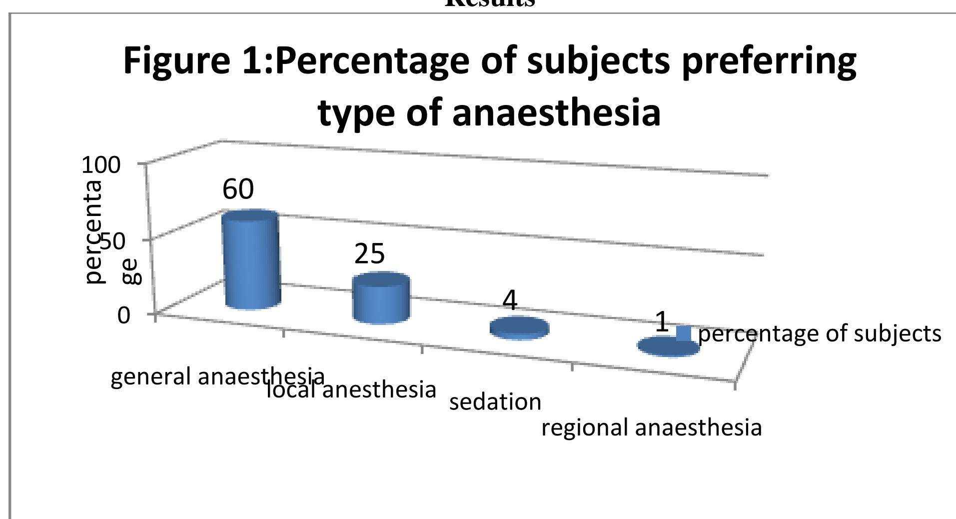

Table 2: Reason for preference of General Anaesthesia (n=45)		
REASON	%age	P value
1. Secure airway (patient and doctor tension free)	50%	<0.001
2. Subsequent easier management of complications	35%	<0.001
3. Anxious /uncooperative patients	5%	>0.001
4. Some gynaecological patients and procedures involving more relaxation of muscles or there are more chances of complications(eg. molar pregnancy, septic abortion)	8%	>0.001
5. Sharing of responsibility	2%	>0.001

Table 3: Reason for not preferring general anaesthesia
1. Intubation and its complications
2. Difficult airway
3. Long procedure (preanaesthetic checkup, investigations etc)
4. GA is expensive
5. Patient discharged late
6. Poor postoperative pain control
7. Requires more postoperative care

Table 4: Reasons for preference of sedation or local anaesthesia (n=20)		
Reason	%age	P value
1. Cost effective	80%	<0.001
2. Awake, alert, conscious patient	5%	>0.001
3. Less dependent on anaesthetist	3%	
4. Early discharge of patient from hospital	10%	
5. Lesser chance of patient complications	2%	

Table 5: Reason for not preferring local anaesthesia
1. Patient uncomfortable
2. Poor postoperative pain control
3. Chances of inadvertent intra-arterial injection and subsequent severe seizures
4. Airway insecure(esp. obese, full stomach patients)

III. Discussion

Since the introduction of D and C, there has always been a debate on to the preference of local, spinal or general anaesthesia. Most anaesthetic studies focus on dilatation and curettage for missed abortions, but in our hospital such procedures are done either as elective interval procedures or as minor OPD procedures on an emergency basis.

Although D and C can be performed under local anaesthesia with sedation, its effectiveness has been questioned and it has been suggested that the anaesthetic technique (i.e., regional versus general) should be individualized, based on anaesthetic and/or obstetric risk factors and patient preference.[11, 12]

General anaesthesia has been recommended for D and C to reduce the complications, but it is not a very safe technique.[13] The case-fatality rate for tubal sterilization procedures has been reported to be 3.6/100,000 procedures. Out of 29 reported deaths, 6 were attributed to complications of general anaesthesia, including hypoventilation in non-intubated women, remaining were due to cardio respiratory arrests of unknown cause.[14]

Local anaesthesia has its own advantages and disadvantages. Most subjects were of the opinion that we cannot predict the complications that may come later on. The conversion from local or regional anaesthesia to general anaesthesia may itself take long time and thus it is better to start with a safer option. The most common reason for preference of local anaesthesia was its cost effectiveness.[15]

Key factors that influence the choice of anaesthesia include availability, effectiveness, safety, side effects and costs. Other factors include patient preference, practitioner choice, facility resources and medical indications. A study was done by Grimes et al, comparing effectiveness of either local or general anaesthesia for suction curettage, involving over 50000 women. It was found that the aggregated major complication rate for the two groups were similar but there were significant differences between complication rate of spinal or local anaesthesia.[16]

Mehta et al[17], in a study of 60 patients, also found better post-operative analgesia with spinal anaesthesia in comparison to GA for LC. They found no significant difference between the groups regarding intraoperative complications, recovery, length of hospital stay and degree of satisfaction. There was no incidence of nausea and vomiting in the patients who received spinal anaesthesia.

Our study had certain limitations. Important being, the point of view of different people for anaesthesia was different while the patient being same. Nowadays gynaecologists are going more towards suction curettage procedures. Type of anaesthesia depends more on patient preference and individual case rather than a generalized approach.

IV. Conclusion

General anaesthesia has the advantage of a safe airway and management of complications later on. RA may provide certain advantages over GA, such as lack of airway manipulation, maintenance of spontaneous respiration, effective post-operative analgesia, minimal nausea and vomiting, and early recovery and ambulation. However, the safety of RA in D and C procedures among various types of patient populations still needs to be verified by further studies.

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