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CLINICAL AUDIT OF OPERATIVE HYSTEROSCOPY AND IT'S COMPLICATIONS IN A SINGLE INSTITUTE PERFORMED BY THE SAME SURGEON IN THE DURATION OF FOUR YEARS

Gynecology

Sandhya Deora* MD, Department of Gynecology, PSRI Hospital, New Delhi *Corresponding Author

Rahul Manchanda MD, Department of Gynecology, PSRI Hospital, New Delhi

Samina Ashraf MD, Department of Gynecology, PSRI Hospital, New Delhi

ABSTRACT

Diagnostic and operative hysteroscopy remains a relatively safe procedure. They occur more frequently with operative hysteroscopy than with diagnostic hysteroscopy. Exact complications rates are difficult to determine owing to the natural tendency to report successes but not complications. Hysteroscopy surgery has become increasingly common, but audits of the incidence of complication has produced varying results. Here, we report the complications of operative hysteroscopy in 327 patients who underwent hysteroscopic surgery at PSRI Hospital, New Delhi in the duration of four years (2013-2017) performed by the same surgeon and we compare it to the rate of complications reported in other studies.

KEYWORDS

hysteroscopy, complications, audit

INTRODUCTION

Complications due to hysteroscopy are relatively rare events. Complications may occur when contraindications are ignored,[1] for example, when proper surgical techniques are not followed or equipment is used in an inappropriate fashion. They also may occur when the procedure has been performed correctly on well-chosen patients.[2] Complications occur more frequently with operative hysteroscopy than with diagnostic hysteroscopy. Exact complications rates are difficult to determine owing to the natural tendency to report successes but not complications. Recognition of these situations will lead to prevention; in fact, all the most serious complications of operative hysteroscopy can be avoided when proper precautions are taken and close communication is maintained among gynecologic surgeon, the anesthesiologist and nursing staff.[3] Complications from operative hysteroscopy are more common and potentially more serious.[4] They may result from:

- Anaesthesia
- Positioning the patient
- The distension media
- The surgery:
  - Uterine perforation
  - Haemorrhage
- Delayed complications:
  - Infection
  - Adhesion formation
- Failure of resolution of the presenting symptoms

The more clinically significant complications are: uterine perforation, haemorrhage and electrolyte imbalance. As hysteroscopy continues to proliferate as a diagnostic and therapeutic tool for intrauterine abnormalities and is becoming extremely popular amongst gynaecologists, the importance of preventing, recognizing and appropriately managing hysteroscopic complications rises.[5]

METHODS

Between November 2013 and October 2017, 327 women underwent hysteroscopy in the Department of Gynecology, PSRI Hospital, New Delhi. 198 women had diagnostic hysteroscopy while 129 women underwent operative hysteroscopy polypectomy, adhesiolysis, myomectomy, metroplasty etc.

TABLE NO. 1

HYSTEROSCOPIC PROCEDURE DONE	NUMBER OF PATIENTS (n=129)
Polypectomy	58
Adhesiolysis	29
Metroplasty	22
Septoplasty with hymenoplasty	01
Myomectomy	11
Adenomyomectomy	02
Tubal cannulation	03
Resection of placental polyp and adenomyoma	01
Resection of placental site tumor and RPOCs	02

Retrospective review of all the hysteroscopies was done by data collected from the hospital records. Total complication rate and rate of other complications including fluid overload, uterine perforation. Bladder injury, bowel injury and postoperative infection was assessed and compared to the rate of complications reported in other studies.

RESULTS

TABLE NO. 2

Complications Reported	Scottish Audit (1995) (n=978)	PROPST et al (2000) (n=925)	Jansen et al (2000) (n=13600)	Pasini et al (2001) (n=697)	Our Study (2017) (n=327)
Total complication rate	12%	2.7%	0.28%	13.6%	0.9%
Fluid overload	01%	0.76%	0.2%	05%	0.3%
Uterine perforation	01%	0.4%	0.76%	1.7%	0.76%
Bladder injury	NR	NR	NR	NR	NR
Bowel injury	NR	NR	NR	NR	NR
Postoperative infection	NR	0.2%	NR	NR	None

DISCUSSION

In 1995, data from the Scottish Hysteroscopy Audit Group reported on 978 hysteroscopic procedures (629 resections, 314 laser ablations, 35 roller-balls) based on consultant and senior registrar registration of cses. A total of 120 complications (12%) were reported, including 61 cases of fluid overload; 11 perforations, of which 6 were via resectoscope; and 35 cases of excessive bleeding. A total of three hysterectomies were performed for operative complications; one death occurred secondary to septicaemia.[6]

In 2000, Propst et al evaluated complications in 925 women and found that operative complications occurred in only 2.7% (25) of the 925 procedures. Five women had more than 1 complication. Specific complications included excessive fluid absorption (7), uterine perforation (4), postoperative infection (2) and procedure termination because of inadequate view or inability to dilate the cervix (5). Four women were admitted overnight for observation or antibiotic treatment. No women underwent laparoscopy or laparotomy because of a complication, nor were there any instances of haemorrhage, bladder or bowel injury. Women undergoing surgery for myomectomy and uterine septal lysis had the highest risk for complications (odds ratios, 7.4 and 4.0, respectively). Women older than 50 were more likely to have complications than women younger than 35. Obesity, cervical stenosis, and previous caesarean section or myomectomy did not increase the risk for complications.[7]

In 2000, Jansen et al reported a multicentric study of evaluation of hysteroscopic complications. Data on complications were recorded by 82 hospitals in 1997. Thirty-eight complications occurred among

13,600 hysteroscopic procedures (rate 0.28%). Diagnostic hysteroscopic procedures had a significantly lower complication rate (0.13%) than operative procedures (rate 0.95%; P <.01). Fluid overloads of distention medium were recorded five times (rate 0.20%). The most frequent surgical complication was perforation of the uterine cavity (rate 0.76%). Approximately half the perforations (18 of 33) were entry-related. Bleeding caused by perforation was seen in 0.16% of cases. Incidences of complications were: intrauterine adhesiolysis 4.48%, endometrium resection 0.81%, myomectomy 0.75%, and removal of a polyp 0.38%.[8]

In 2001, Pasini et al reported intraoperative complications of 697 operative hysteroscopies. In this series complications occurred in 95 out of 697 patients (13.6%). The most important complications were: 12 (1.7%) uterine perforations, 48 (6.9%) intraoperative haemorrhages and 35 (5%) excessive hypotonic fluid absorptions. Four out of 12 perforations occurred during the dilation of the cervical channel. Since the distention of the uterine cavity could not be achieved, the procedures were stopped. No signs of vaginal or intraperitoneal haemorrhage were observed; 8 out of 12 perforations were due to the tip of the electrical source. The operative hysteroscopies were immediately stopped and the consequences were: 6 diagnostic laparoscopies, 1 laparotic hysterectomy (hemorrhage) and 1 laparotomy for thermal bowel injury. In 48 patients intraoperative bleeding could not be controlled with electrocautery. In these cases in the operating room a Foley catheter was inserted into the uterine cavity and the bulb inflated with 10 to 30 mL of liquid to tamponade the bleeding. The catheters were removed 12 to 24 hours later. No patients required blood transfusion. Excessive intravasation of electrolyte-free fluid occurred in 35 patients. Hyponatremia and hypokalemia (hypo-osmolarity result) were never serious. Headaches, nausea and vomiting were the most frequent symptoms of our patients. No cardiac arrhythmia, cerebral edema, brain herniation occurred. In this series, hemorrhage was the most common complication; intravasation and uterine perforation were at the second and the third place.[3]

In our series complications occurred in 3 out of 327 patients (0.9%). The most important complications were: 2 (0.6%) uterine perforations, and 1 (0.3%) excessive hypotonic fluid absorptions. Total complication rate and rate of other complications were comparable to the rates reported in other series. One uterine perforation occurred during septal lysis in a case of complete uterine septum. Second perforation occurred in a case of resection of submucous myoma while using a bipolar resectoscope. In both cases procedure was terminated and patient managed conservatively. One case of fluid overload occurred in a case of resection of submucous myoma. Postoperatively, after a few hours patient complained of headache, dizziness and vomiting. Patient was managed conservatively with diuretics and correction of electrolyte imbalance. No women underwent laparoscopy or laparotomy because of a complication, nor were there any instances of haemorrhage, bladder or bowel injury.

Uterine perforation is the commonest complication of hysteroscopic surgery. Uterus can be perforated during dilation or with hysteroscope. Cervical stenosis, severe uterine anteflexion or retroflexion, synechiae, myoma resection, endometrial resection, septa division and operator inexperience, all increase the risk of perforation.[5]

Problem of fluid overload is one of those complications of hysteroscopic surgery which can be easily prevented by following certain guidelines. Excessive infusion pressure that results in excessive intrauterine pressure is the most important risk factor.[5] We have used Endomat for most of our cases but whenever we have used pressure bag, we followed the basic principle to use lowest pressure to achieve clear view of uterine cavity. In our experience, pressure reflected by manometer is not the true intrauterine pressure.

Operative procedures that last more than one hour and incorporate resection of large amounts of tissue are more likely to lead to fluid overload complications. Meticulous measurement of inflow and outflow of distension media is the most important factor to prevent fluid overload.

CONCLUSION

Overall, both diagnostic and operative hysteroscopy had a low rate of morbidity and satisfactory efficacy with rapid postoperative recovery. Intraoperative complications found in our study are comparable or even less than the complications reported in the published reports. With proper preoperative evaluation, proper surgical technique and vigilance for impending problems, complications of hysteroscopic surgery are largely preventable. Fluid overload and uterine perforation are the commonest complications. Hysteroscopists must know the various types of media and peculiar problems associated with each so that he or she can make surgery safe. Adequate knowledge of the procedure, it's complications and appropriate management hysteroscopic surgery is a safe surgical procedure endo-uterine abnormalities.

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