

ISARCON 2017 Manual of Operative Hysteroscopy

Series Editors
Maninder Ahuja
Narendra Malhotra
Poonam Loomba

Indian Society for Assisted Reproduction
ISAR Haryana 2017
21st - 23rd April, 2017
Illuminating Fertility Treatments
Basics & Beyond

ISAR

Contents

1. **Preoperative Diagnosis and Case Selection for Operative Hysteroscopy** 1
   Vimee Bindra, Jatinder Chadha
2. **Instrumentation in Hysteroscopy** 12
   Rahul Manchanda, Stuti Tyagi, Jahnavi Meena
3. **Energy Sources in Operative Hysteroscopy** 27
   Pratik Tambe
4. **Complications of Hysteroscopic Surgery** 36
   Rahul Manchanda, Stuti Tyagi
5. **Technique of Hysteroscopic Myomectomy** 41
   Sujata Kar
6. **Uterine Septal Resection** 51
   Anupama Sethi
7. **Intrauterine Adhesions: Hysteroscope Evaluation and Treatment** 60
   Raju R Sahetya
8. **Hysteroscopic Morcellation** 69
   Priya Bhave, Rahul Manchanda, Jahanavi Meena, Stuti Tyagi
9. **Tips and Tricks of Hysteroscopy** 76
   Sujata Kar
10. **In Bag Morcellation of Fibroid and Large Uterus: A New Solution and Innovation to Tackle the Issue** 79
    Prakash Trivedi, Soumil Trivedi, Sandeep Patil

Prelims Manual 2.indd 19 10-04-2017 17:08:56

Complications of Hysteroscopic Surgery

4

Rahul Manchanda, Stuti Tyagi

Diagnostic and surgical hysteroscopic techniques have become established as primary techniques in gynecological practice and completely revolutionized the therapeutic approach to endocavitary pathology. Hysteroscopy is considered a minimally invasive procedure with low incidence of complications, when implemented properly for the right indications in patients with better experience of the operating surgeons.

However, as in all operating techniques, potential complications should always be taken into account. The potential complications can be categorized as follows:

1. Intraoperative complications.
2. Postoperative complications.

INTRAOPERATIVE COMPLICATIONS

Complications, which may arise during the hysteroscopy operations, may include:

Anesthesia Complications

Vasovagal crisis arising due to pain from excessive distension of the uterine cavity and the passage of the instrument through the cervical canal is an immediate complication.

Traction over cervix may also trigger a vasovagal reaction. Patient complaints of uneasiness and there is hypotension and bradycardia.

With development of lesser diameter newer hysteroscopes and administration of injection. Atropine prior to surgery, this can be prevented.

Traumatic Complications

The most frequent traumas in the course of hysteroscopic examination are:

- Cervical lacerations

JAYPEE BROTHERS

- False passage
- Uterine perforations
- Hemorrhage.

Generally, these complications are correlated with operator inexperience and the difficulty of the treated pathology. Surgical techniques like metroplasty, myomectomy and endometrial resection carry a greater risk for perforations.

Cervical lacerations occur due to excessive traction on cervix by tenaculum or when cervix is forcefully dilated. Cervical stenosis, atropic postmenopausal uterus and uterine hypoplasia are some of the predisposing factors. Preoperative preparation of cervix with vaginal misoprostol (200 micrograms) is extremely helpful in cases like stenosed cervix. In cases of previous access failure adhesions or synechiae in the canal frequently exist. In such instances, the use of mechanical scissors through the operating channel can be done under direct vision.

Formation of false passage occurs during dilatation of the cervix without actually perforating the uterus. Acute retroflexion, stenosed cervix and menopause are few predisposing conditions. Use of smaller diameter hysteroscopes is helpful in diagnosing and preventing perforation.

Perforation is diagnosed on the basis of direct hysteroscopic vision. Predisposing factors are acute ante or retroversion of uterus, cervical stenosis, uterine synechia, endometrial malignancy and uterine malformation. Unexpected insufficient distension of the uterine cavity or hemorrhaging must always give cause to suspect a possible perforation.

In almost all cases, a purely mechanical perforation of the uterus or the cervical canal does not have serious consequences. In such an eventuality, it will be necessary to suspend the procedure and monitor the patient, so as to exclude the presence of hemorrhaging. Tachycardia and hypotension are indicative of ongoing hemorrhage. In such cases, laparoscopy should be done and bleeding is controlled by endocoagulation or sutures along with prophylactic antibiotics.

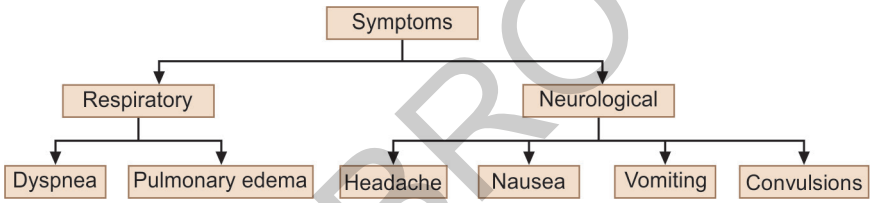
Hemorrhage is infrequent in hysteroscopy. It can be reduced by preoperative administration of GnRH analogs or intraoperative injection of vasopressin into the cervical stroma. Light venous bleeding, intraoperatively, can be reduced by temporary increase of intrauterine pressure that improves visualization. Bipolar coagulation can be used to control venous and arterial bleeding with a rollerball or loop electrode. Emptying the bladder during the procedure and giving a bimanual uterine massage also helps to control hemorrhage during hysteroscopy. If required, a Foley catheter is inserted into the uterine cavity and the balloon is inflated to 30–50 ml, which can be removed after 6 hours to check for hemostasis.

JAYPEE BROTHERS

COMPLICATIONS OF DISTENSION MEDIA

- **Air embolism** occurs when a noncollapsable vein is opened or severed and a positive pressure gradient is built up between the vessel and the ambient pressure or a negative pressure is generated between an open vessel and the heart. When the patient is in the Trendelenburg position, gas bubbles may be trapped in the splanchnic circulation, liver or left ventricle for a long time and only later produce symptoms of air embolism.
- **Fluid overload syndrome** occurs due to the excessive quantities of nonelectrolyte low viscosity solution during the surgical procedure. It may also lead to electrolyte alteration and metabolic imbalance.

The pathogenesis consists of an increase in central arterial and venous pressure in response to hypervolemia resulting in reduction of the hematocrit and onset of hyponatremia (Flowchart).



Prevention is based on vigilant attitude of the operating team alongwith monitoring of the signs and symptoms.

- Locoregional anesthesia to keep the patient awake.
- Bipolar electric system with physiological solution for distension of the uterine cavity.
- Maintain distension pressure between 90 and 100 mm Hg.
- Reduce surgery time.
- Fluid deficit between 1.5 liters for glycine, $Na^{+} < 125$ mEq/l.
- Continuous communication with the patient to identify any early signs and symptoms.

As regards to management of intravasation syndrome, it is recommended to immediately suspend the operation at the appearance of the first symptom.

Treatment of asymptomatic patients:

- Restrict intake of fluids.
- Monitor serum Na^{+}, K^{+} and $Ca.^{++}$
- Diuresis with Furosemide.
- Monitor intake and output of fluids.

JAYPEE BROTHERS

Treatment of asymptomatic patients:

- Intravenous infusion of 1L of RL.
- Aggressive diuresis with furosemide.
- Supplemental oxygen and ventilator support, if evidence of pulmonary edema.
- Monitor vital signs, urine output, and serum electrolytes.
- Consider infusion of sodium bicarbonate.

Thermal Damage

Thermal injuries can occur to intraperitoneal structures, especially bowel if an activated electrode perforates the myometrium and serosal surface. Injury can also occur without perforation, if bowel was adherent to the serosal surface and deep myometrial resection is used in the region of uterine cornua.

Injury may also occur at the site of placement of the patient plate, if it is dislodged.

The use of bipolar current reduces this risk, because with these instruments there is no opportunity for current diversion. It is advisable to activate the loop only under direct visual control and for brief periods. Footswitch should not be placed in a location, which may result in accidental activation of the current. Patient plate should be securely affixed to the patient.

POSTOPERATIVE COMPLICATIONS

Postoperative complications are statistically less common, but more pernicious as they affect patients away from hospital, given that majority of hysteroscopic operations are performed in outpatient setting.

Infection

It is a rare complication, with an incidence of 0.2–1% of all hysteroscopic operations. It occurs more commonly in women with history of PID. Patient may present with fever, pelvic pain, odorous discharge and tenderness on manual examination of the uterus. It may also occur due to obstruction of the internal os and hematometra due to intrauterine adhesions.

Complications due to Patient Position

Acute compartment syndrome may occur due to dorsal lithotomy position during operative procedure. It occurs when the pressure in the muscle of an osteofacial compartment is increased to an extent that

JAYPEE BROTHERS

compromises local vascular perfusion. It leads to neuromuscular compromise and serious sequelae including permanent disability. Injury to motor nerves arising from lumbosacral plexus, i.e. femoral, obturator and sciatic nerve also occurs due to lithotomy position during surgery. The risk increases with prolonged operative time. The common peroneal nerve is injured, if there is excessive pressure over the head of the fibula from stirrup, leading to foot drop and lateral lower extremity paresthesia.

Intrauterine Adhesions

Due to excessive resection adhesions may occur. Cyclical hormonal tablets to facilitate the growth of endometrium can prevent it. Intrauterine devices can also be placed to prevent adhesion formation.

In conclusion, it can be affirmed that complications of hysteroscopic surgeries usually are related to the experience of the surgeons. Having the appropriate instruments available is an absolute requirement in order to reduce the incidence of complications.

These considerations emphasize not only the necessity of acquiring valid experience in diagnostic hysteroscopy, but also the requirement of a training period in a training center before attempting difficult operating techniques.

JAYPEE BROTHERS

Available at all medical bookstores
or buy online at www.jaypeebrothers.com

JAYPEE BROTHERS
Medical Publishers (P) Ltd.
www.jaypeebrothers.com

Join us on facebook.com/JaypeeMedicalPublishers

ISBN 978-93-5270-075-2