

CHANGING TRENDS IN CONSERVATIVE PELVIC SURGERY

by

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SUMMARY

Gomel and Winston report that previous conventional pelvic surgery is responsible for infertility in 47.7% and 73% of cases respectively.

This emphasises the need for gentle atraumatic conservative pelvic surgery in young women. The principles of such surgery viz. irrigation, atraumatic technique, excision of all pathological tissues, accurate hemostasis, precise approximation of tissues, reperitonealisation, use of fine sutures, pelvic lavage and avoidance of unnecessary ancillary procedures are described in detail.

The finer technical points in common conservative pelvic surgery viz. ovarian cystectomy, wedge resection of ovaries, surgery for endometriosis, myomectomy and metroplasty are discussed. The different types of conservative operations for tubal pregnancy viz. Salpingotomy, segmental excision etc. giving term pregnancy rates of about 50% to 100% (Bukovsky *et al*, Gomel and Stangel *et al*) are discussed.

Introduction

When a laparotomy is undertaken in a female infant, adolescent or a young woman, conservation of fertility must be given foremost consideration.

Kurt Swolin (1979) states "Gynaecological surgery has been influenced a great deal by cancer surgery, which by no means requires gentle treatment of tissues. All efforts should be made to convince our operating colleagues of the necessity of converting from conventional rough techniques to more gentle and non-traumatic techniques."

The essence of microsurgical technique

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is the reduction of pelvic damage caused by unnecessary trauma resulting in a "clean" pelvis. The most important impact that microsurgery could have on gynaecological practice would be the realisation that these microsurgical principles apply just as much to young women undergoing laparotomy.

The avoidance of trauma requires no microscope, no micro-surgical instruments, no microsurgical skills, only barest training. It is, therefore, regrettable that such iatrogenic disease is still so common.

Previous Pelvic Surgery

The incidence of previous pelvic surgery in patients needing tubal microsurgery for infertility is quite substantial. Gomel (1983) reviewing 132 cases of Salpingo-ovariolysis and fimbrioplasty found that 59

cases (44.7%) had some previous pelvic surgery in 79 cases (73%). Again, Winston brings out a very vital fact that the term pregnancy rate in these 73% cases was only 7.3%, while the same in the remaining 23% cases (who had no previous pelvic surgery) was as high as 42% (Table I).

TABLE I
Previous Pelvic Surgery in Patients Needing Subsequent Tubal Microsurgery for Infertility

	Total cases	Previous pelvic surgery %
Gomel	132	44.7
Winston	108	73
Winston		Term pregnancy
79 Cases with previous pelvic surgery		7.3
29 Cases without previous pelvic surgery		42

If all these cases had careful gentle atraumatic techniques applied at the rest pelvic surgery, the subsequent microsurgical operation would have been avoided in most cases.

Principles of Atraumatic Conservative Pelvic Surgery

1. Abdominal incision

This should be adequate. It is preferable to use electro-surgery. Proper hemostasis before opening the peritoneum is essential. Adequate exposure is obtained by using a Dennis Browne or Kirschner retractor.

2. Microsurgical Principles

These principles should be observed even in the absence of microscope. They are:

(i) Washing of gloves thoroughly to remove the powder.

(ii) *Irrigation*: Continuous irrigation with Ringer's lactate to keep tissues moist. Skin towels, abdominal sponges should be soaked in Ringer's lactate. Gentle packing of the intestines and loose packing of Douglas' pouch, avoiding abrasion should be carried out.

(iii) *Atraumatic technique*: It is best to avoid any clamps, stay sutures and not to apply instruments especially on the tubes and ovaries. Babcock forceps also must be considered traumatic. Tubes and ovaries must be handled gently with fingers and Teflon rods. The Shirodkar uterine holding clamp may be used for lifting and moving pelvic organs.

(iv) *Excision of all Pathological tissues*: The pathology should be identified and isolated by covering up healthy tissues with moist pads and preferably by a silastic sheet. All pathological tissues must be carefully excised. Only tissues to be excised should be held by an Allis forceps or toothed dissecting forceps. All healthy tissues, especially tubal and ovarian, should be conserved as much as possible especially in cases of ectopic gestation.

(v) *Hemostasis*: Meticulous hemostasis must be carried out under a jet of irrigation. Dry gauze swabs should be avoided as they cause abrasion. Hemostasis is best carried out with monopolar and bipolar electro-surgery.

(vi) *Precise approximation of tissues*: Healthy tissues — tube, ovary should be properly aligned and precisely approximated.

(vii) *Reperitonealisation*: All raw areas in the pelvis must be carefully reperitonealised using 4-0 to 6-0 vicryl or nylon sutures. If the defect is large, a peritoneal graft should be used.

3. Avoidance of unnecessary ancillary procedures

Unnecessary procedures such as ventral-

suspension, appendectomy, excision of small follicle cysts should be avoided. Laparotomies primarily for ventral suspension or wedge resection of the ovary are hardly indicated. Attempts at tuboplasty in acute conditions such as ectopic or infection should be avoided.

4. *Fine suture materials*

Plain and chromic catgut cause extensive inflammatory reaction and therefore should be avoided. If absorbable sutures are desired, use vicryl or Dexon. For non-absorbable sutures, the choice is nylon or prolene. Suture materials to be used should be as fine as possible, no thicker than 2|0.

5. *Pelvic lavage*

At the end of the procedure, the pelvis should be lavaged with Ringer's lactate and about 150-200 ml. of Ringer's lactate or Dextran 6% or 50 ml. of Dextran 32% is instilled before closure of peritoneum. Additional drugs such as hydrocortisone (2000 mgm) or dexamethasone (100 mgm) may be added in the event of significant serosal damage.

6. *Magnification*

Ocular loupes (x 2.5 to 4) may be needed in some cases of endometriosis surgery or ovarian surgery.

7. *Abdominal closure :*

Care should be taken at abdominal closure. Fine sutures (2|0-3|0) should be used for the peritoneum and its edges everted.

Conservative Pelvic Surgery

1. *Ovarian Surgery (Fig. 1)*

(i) *Ovarian Cystectomy :*

The ovarian cyst must be isolated by laparotomy pads and silastic sheet. The elliptical incision over

the cyst is made preferably by a fine electrode. After excision of cyst, careful hemostasis is carried out with bipolar or monopolar electrocoagulation. Ovary is carefully reconstructed in 2 layers. The stroma is approximated by interrupted 3|0 to 5|0 vicryl or nylon sutures. The ovarian capsule is meticulously approximated with 5|0 to 6|0 vicryl or nylon continuous or semicontinuous suture inverting the edges. Ocular loupes are necessary for this suturing.

(ii) *Wedge Resection of Ovary :*

There is little if any need for wedge resection today. This surgery when unnecessarily done causes a lot of adhesions. If indicated, the steps mentioned for ovarian cystectomy should be carefully observed.

2. *Surgery for Endometriosis*

(i) *Adhesiolysis :*

The adhesions are usually fleshy and vascular and carefully divided using teflon rods and monopolar electrosurgery with fine electrodes.

(ii) *Peritoneal Endometriotic Implants :*

Endometriotic implants in "safe" areas should be thoroughly and deeply electrocoagulated. Those located in "unsafe" areas such as bladder, bowel etc. should be excised carefully with scissors under magnification.

(iii) *Chocolate Cysts :*

These should be excised using electrosurgery and the ovary repaired carefully in 2 layers as mentioned in ovarian surgery.

(iv) *Reperitonealisation :*

Endometriosis surgery often results

in some raw areas which should be carefully reperitonealised.

3. *Reconstructive Uterine Procedures*

Operations such as myomectomy and metroplasty often result in a lot of pelvic adhesions and therefore the principles of conservative pelvic surgery should be carefully applied.

Injection of vasopressin and oxytocin makes the field bloodless and allows ligation of major and electrocoagulation of smaller blood vessels.

The uterine wall is closed in 2 to 3 layers. The muscularis is approximated by 1 or 2 layers of 2|0 vicryl sutures. The serosa should be approximated with 4|0 to 6|0 vicryl or nylon sutures. Occular loupes may be necessary for accurate approximation.

4. *Conservative Surgery for Tubal Pregnancy*

Patients of reproductive age who desire further pregnancies, who have a tubal pregnancy (preferably unruptured), and are surgically stable, are suitable for conservative surgery.

Schenker *et al* (1972) reported on fertility after ectopic pregnancy in 277 patients as follows :

Living child	— 62	— 22.3%
Abortion	— 13	— 4.7%
(Repeat) Ectopic pregnancy	— 39	— 14.0%
Sterility	— 126	— 45.6%
Contraception	— 20	— 7.2%
Sterilization	— 17	— 6.1%

The incidence of repeat ectopic pregnancy is 14% i.e. 53 fold increase. The principles of conservative surgery are (1) to excise all gestational tissue, (2) to obtain hemostasis, (3) to conserve as much of the tube as possible, (4) to employ atraumatic technique and (5) careful pelvic lavage.

(i) *Salpingotomy* : (Figs. 2 & 3)

This is preferred in lateral ampullary pregnancies. The affected tube is isolated and raised by laparotomy pads. An incision is made electrosurgically on the antimesenteric border. The products of conception are carefully removed by suction and blunt dissection with the handle of the scalpel. Careful hemostasis with mono or bipolar electrocoagulation is carried out. This may be aided by injecting a dilute vasopressin solution into the tubal wall. The incision may be closed by 5|0 or 6|0 vicryl or nylon sutures. In the ampullary region the incision may be kept open and few fine sutures taken on the cut edges.

Bukovsky *et al* (1979) reported on 24 cases of salpingotomy with 55% live births and 5% repeat ectopic.

(ii) *Segmental Excision* : (Fig. 4).

This is preferred in isthmic or proximal ampullary pregnancies. The tube is ligated proximal and distal to the gestation site by 2|0 vicryl or nylon suture and the tube with the gestation is excised. The mesosalpinx is also ligated.

Gomel (1983) reports on 9 cases of segmental excision undergoing subsequent tubotubal anastomosis with 5 term pregnancies (55%) and 1 repeat ectopic (11%).

(iii) *Segmental Excision and Anastomosis* :

Stangel and Reyniak (1982) recommend this procedure where a tubotubal anastomosis using 1 layered seromuscular sutures with 8|0 nylon (8, 12 and 4 O'clock) is carried out immediately after the excision is surgically stable patients.

Stangel and Reyniak (1982) report 100% patency in 11 patients and

100% term pregnancy in 2 patients who attempted pregnancy. This procedure is useful in isthmic pregnancies and can be performed without magnification as the tissues are enlarged and oedematous.

The above mentioned procedures can be carried out even in ruptured tubal pregnancies provided the patient is surgically stable.

Tubal abortion cases can be completed by milking and hemostasis. If, however, bleeding continues a salpingotomy should be carried out.

5. Female Sterilization

Female sterilization should be performed while keeping in mind the need for reversal.

Several workers have shown excellent term pregnancy rates of 69 to 73% (Silber and Cohen (1980), Winston (1979), Rock *et al* (1980) after isthmo-isthmic or isthmo intramural anastomosis. Winston (1984) has reported 95% term pregnancy rates after isthmo-isthmic anastomosis in 25 cases of sterilization done with Hulka clips. Therefore, sterilization procedures such as Pomeroy's, Silicone ring or clip in the isthmic region should be preferred.

Conclusion

Atraumatic conservative pelvic surgery is the need of the day and can be carried out with little training but with a positive change in the mental attitudes of the gynaecologists.

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