14-year experience in the Management of Benign Adnexal Masses by Laparoscopy

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Summary

We treated 1158 patients, in different hospitals in the northern area of Honduras, of May 2006 to May 2020 with different gynecological pathologies, which 553 were due to simple ovarian cysts, 122 were due to torsion and these 3 giant ovarian cysts by laparoscopy; 431 for laparoscopic ovarian diathermy for the surgical management of polycystic ovarian syndrome resistant to conservative treatment; 497 between endometriosis and endometriomas (348 and 149 respectively) between these two pathologies were performed 391 adhesiolysis; 58 cases of ectopic pregnancies of which 11 were salpingostomies and 47 were salpingectomies; 29 teratomas of which 13 completely removed the intact capsule by hydrodissection and 16 underwent oophorectomy; and other pathologies found that were 21, including 8 appendectomies, 3 extractions of the foreign body (IUD), 2 pelvic Tuberculosis diagnosed by pathology and peritoneal fluid, 2 torsion of the left tube and Hidrosalpinx 4, and 2 torsion of the right ovarian cyst in pregnancy of 14 weeks of pregnancy. Conclusion: Laparoscopic gynecological surgery is a surgical technique that has great benefits for patients who undergo this procedure, for this reason they have to perform institutional protocols to reduce the risk of complications.

Keywords: Adnexal Masses, Laparoscopic Gynecology

Introduction

Adnexal masses are commonly found in gynecological practice and it is a dilemma to diagnose and treat each one of them; some require immediate surgical treatment (1). With the help of gynecological laparoscopic surgery, adequate and timely management of adnexal pathology in gynecology has been achieved.

The diagnosis of adnexal masses includes those of gynecological and non-gynecological origin (1). Among those of gynecological origin, they can be: benign eg. Functional cyst (follicular cyst), endometrioma, tubal abscess, ectopic pregnancy, mature teratoma, serous cystadenoma, mucinous cystadenoma, hydrosalpinx, etc. And evil ex. Germ cell tumor, stromal tumor, epithelial carcinoma.

Among those of non-gynecological origin: benign eg. Diverticular abscess,
appendicular abscess or mucocele, urethral diverticulosis, pelvic kidney, bladder diverticulum, etc. And evil ex.
Gastrointestinal cancer, retroperitoneal sarcoma among others.

The most widely used diagnostic method is ultrasound, and the information obtained should include size, consistency of the mass (cystic, solid, or mixed), whether it is unilateral or bilateral, the presence of abscesses or septa, mural nodules, papillary excrenceses, and free fluid. in the pelvic cavity, the presence of vascularity in an adnexal mass through Doppler is predictive of malignancy (2,3).

In the physical examination, a pelvic examination is very important, including a rectal examination, sometimes under anesthesia, when there is a body mass index above 30%, which limits the ability to identify an adnexal mass (4).

Another diagnostic method used is computerized axial tomography, where omental metastases, peritoneal implants, liver metastases, enlarged peri-aortic lymph nodes can be detected (5-8).

The most extensively studied serological marker for being associated with malignancy in the presence of a pelvic mass in CA 125; it is elevated in 80% of cases of epithelial ovarian cancer, but only 50% of stage I patients are diagnosed on time (9).

HE4 (Human Epididymal Protein 4) is a new marker, complementary to CA 125 in the diagnosis of ovarian tumors. HE4 is a glycoprotein that is overexpressed in ovarian cancer, but not in benign conditions. Combining both tests (CA 125 + HE4) increases the sensitivity for determining the risk of malignancy in patients with ovarian cysts and pelvic masses. There are points to take into account with the ROMA Risk of Ovarian Malignancy Algorithm.

The following parameters are used: CA 125 and HE4 values (U/ml), age of the woman, menstrual status (Pre/Postmenopausal).

**Pre-menopausal:** ROMA greater than or equal to 7.4% high risk of ovarian cancer.

**Postmenopausal women:** ROMA greater than or equal to 25.3% high risk of ovarian cancer (10).

The objective of this study was to determine the efficacy of laparoscopic surgery in the management of different gynecological adnexal masses and to identify their complications over the course of 14 years, and to establish biosafety protocols for patients with coronavirus and health personnel.

**Materials and Methods**

This is a descriptive, cross-sectional and multicenter study that was carried out over a period of 14 years (from May 2006 to May 2020). A total of 1,158 gynecological laparoscopic surgeries were performed in different hospitals in the north-western region of Honduras (Northern Regional Military Hospital, San Pedrano Cemesa Medical Center, Valle Hospital, Monte de Sion Medical Center, San Ignacio Clinic, Plaza Médica Clinic, Polyclinic Honduran, La Lima Medical Center Hospital, Leonardo Martínez Valenzuela Hospital).

All patients with a clinical or imaging diagnosis of: Teratoma or dermoid cyst, Endometrioma, Ectopic Pregnancy, Endometriosis, simple ovarian cysts, Hydrosalpinx were included in the study, using these as inclusion criteria. And they signed an informed consent sheet as part of the care protocol, and a data collection sheet, which includes imaging diagnoses, hospital stay, postoperative evolution, observed complications. For the laparoscopic technique, it includes general anesthesia, in some cases the patient in the lithotomy position, after asepsis and antisepsis, placement of a bladder catheter and placement of sterile fields, where CO2 between 12 and 15 mm of mercury is insufflated with a Veress needle or by means of a technique open, three entry ports were used, one at the umbilical level of 5 or 10 mm, another at the level of the left flank of 5 mm and another at the level of the left iliac fossa 2 cm from the left iliac crest of 5 or 12 mm. In the last 4 months of the study, protocols were established for the biosafety of patients and health personnel, and among them are: - request a diagnostic test for Covid 19 (Rapid Test or PCR or Antibodies) to all patients who were intervened; - use a Level 3 biosafety suit trying to minimize the risks to medical and nursing staff; - use a chlorine reservoir trap by placing a hose in one of the accessory trocars so that the CO2 inside the abdominal cavity is extracted through through the trap.

**Results**

1,158 laparoscopic gynecological surgeries were registered, in the 14 years of the study, of which 553, which represents 47.76%, were due to simple ovarian cysts, of which 122 were due to torsion and of these 3 giant ovarian cysts by laparoscopy and 431 by laparoscopic ovarian diathermy for the surgical management of polycystic ovary syndrome resistant to conservative treatment; 497 representing 42.92% between endometriosis and endometriomas (348 and 149 respectively) between these two pathologies 391 adherenciolysis were performed; 58 cases of ectopic pregnancies representing 5.01% of which 11 were salpingostomies and 47 were salpingectomies; 29 teratomas, these represent 2.50% of which 13 completely removed the intact capsule and 16 underwent...
**Graph 1:** Incidence of different gynecological pathologies treated by laparoscopy in 14 years

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**Graph 2:** Distribution of patients by age group

**Table 1:** Data on the frequency of the different pathologies after 14 years of study, treated by laparoscopy.
and other pathologies found that were 21 and represent 1.81% which include appendectomy 8, foreign body extraction (IUD) 3, pelvic tuberculosis 2 diagnosed by pathology and peritoneal fluid. Figure (1), tubal torsion 2 and Hydrosalpinx 4. Figure (2), and right ovarian cyst torsion in a 14-week pregnancy 2. (Graph and Table1). The age between 20 and 39 years was where 96.2% of laparoscopic surgeries were performed (Graph 2).

Among the complications that arose was an inadvertent thermal injury to the intestine due to multiple pelvic adhesions, for which an exploratory laparotomy with colostomy was performed 24 hours later, as well as 1 noticed bladder injury which was repaired at that time, 1 abdominal wall abscess in one of the trocars managed with antibiotic therapy and drainage, 1 incarcerated hernia in one of the 12-mm trocars of a diabetic patient which was repaired on the fourth day of surgery; 9 surgeries were converted (laparotomy was performed at the same surgical time) due to multiple adhesions and difficult to approach, these complications represent 1.12% of all surgeries performed by laparoscopy.

Conclusions

According to the care guidelines for patients with adnexal masses (11,12) with imaging evaluations (ultrasound or control tomography) and clinical evaluations, the benefit of the gynecological laparoscopic procedure in the postoperative evolution of the patient was verified, less pain, faster recovery, faster return to productive life (13,14). In the case of pregnant patients with adnexal masses, there is not enough evidence where we have to wait for fetal maturity to perform a laparoscopy, if there are no symptoms of torsion of a cyst it can be managed conservatively (15).

We cannot fail to remember all the benefits that this type of surgery has for patients: less pain, less hospital stay, quick recovery; but it also has to do with the experience of the surgeon and the work team (16-18).

The protocols established for the safety of health personnel are essential for carrying out laparoscopic surgical procedures, although it is true at the beginning we only handle emergencies without coronavirus, we have to take into account those patients who have Covid 19 who are asymptomatic but who have an existing gynecological pathology that decreases their quality of life, for this reason this is one of the alternative surgical methods to treat this type of condition.

95% of surgical gynecological pathologies can be approached laparoscopically and this surgical technique is increasing, so we recommend gynecological laparoscopy programs for gynecology residents.

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