

## **BILATERAL TUBAL STERILIZATION: ANATOMY OF THE PROCEDURE'S PATH IN A LAPAROTOMY**

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**Abstract:** Bilateral tubal sterilization through laparotomy is an invasive surgical procedure performed as a contraceptive method. To have a technically correct operation, anatomical knowledge is required to plan the best intervention strategy. Cadaveric dissection was performed to show the process. The present work aims to report the demonstration of the path traveled during the procedure. This is an exploratory descriptive research with a qualitative approach based on the dissection of a female adult cadaver from the FAMENE/PB laboratory in June 2017. Cotton yarn, curved Kelly tweezers, and curved Metzenbaum scissors were used, as well as usual dissection material, as well as techniques suitable for this purpose. Priority was given to the visualization of structures relevant to the process. It was possible to identify the subcutaneous tissue, the sheath of the rectus abdominal muscle, the rectus abdominal muscle, the pyramidal muscle, the parietal and visceral peritoneal, and the uterus together with its tubas, being coherent with the literature, the east path of bilateral tubal ligation. The performance of this surgery in cadaver contributed as training, learning, and insertion to the research.

**Keywords:** Sterilization, Cadaver, Anatomy.

## INTRODUCTION

The female reproductive system consists basically of two ovaries, two fallopian tubes, a uterus, and a vagina. The tubes, also known as fallopian tubes, are a kind of tube that connects the ovaries to the uterus. With each menstrual cycle, one of the ovaries releases an egg to be fertilized. This egg is released towards one of the tubes, and there it waits for the arrival of sperm for eventual fertilization. (PINHEIRO, 2015).

Sterilization or ligation of tubes is a surgery performed for voluntary sterilization, in which women's tubes are tied or cut,

preventing the egg from meeting with sperm, it does not prevent ovulation or interfere in the female hormonal cycle, thus causing no change in the menstrual cycle. There are two types of ligation: abdominal and vaginal. (TORQUATO, 2013)

The ligatures of abdominal tubes are: laparotomy/mini-laparotomy and laparoscopy. In *minilaparotomy*, the cuts are minimal, about 3 – 5 mm, resulting in almost invisible scars, in addition to less aggression to the abdominal wall, which allows faster and less painful recovery, while laparotomy is performed after cesarean delivery, following its incision line above the pubis (REZENDE; MONTENEGRO, 2013). On the other hand, laparoscopy has a lower organic repercussion, lower metabolic, inflammatory, and immunological reaction, when compared to laparotomy; this represents a great benefit for the patient including here the most severe and with impaired organs and systems. (SALIM; CUTAIT, 2008).

Vaginal ligations are: colpotomy and hysteroscopy. Colpotomy is done through an incision in the bottom of the posterior sac of the vagina, from where the tubes are reached. While hysteroscopy, different from traditional tubal ligation, allows sterilization without an incision in just ten minutes, and can be performed on an outpatient basis. No cutting is performed and, therefore, there is no need for anesthesia, hospitalization, or removal from daily activities. The procedure is done using a micro implant of only four centimeters that promotes definitive contraception in a minimally invasive manner through hysteroscopy. Devices in the form of small little springs are used, inserted into each of the tubes through the cervix by hysteroscopy equipment. (PINHEIRO, 2015).

Tubal ligation can be performed in association with pregnancy (postpartum) or after intermission. Approximately half of

the cases of tubal sterilization are performed postpartum during hospitalization for cesarean or vaginal delivery (REZENDE; MONTENEGRO, 2013). Pomeroy's procedure is the most preferring, and his technique was described by his colleagues after his death. The middle part of the tube is seized creating a handle that is attached and dried out to scissors. It is important to use absorbable sutures (originally chrome catgut n• 1 double and currently single catgut) to ensure that the dried-out ends remain separate (REZENDE; MONTENEGRO, 2013). Although all tubal ligation techniques are highly effective, the risk of pregnancy varies with post ligation time, patient age, and occlusion method. Pregnancy can occur many years after the procedure, and when it does, the risk of tubal pregnancy is great. (REZENDE; MONTENEGRO, 2013).

Bilateral tubal ligation is a surgical procedure with permanent contraceptive benefits often performed nowadays, mainly by laparotomy, since many women opt for a tubal ligation after cesarean section for practicality and opportunity. It has anatomical and clinical therapeutic importance, making it necessary to study the structures explored during this procedure to help clarify the anatomy facilitating the study of medical students and possibly corroborating for effective procedures in this area. In this sense, there was interest in evidencing the structures addressed during the surgical procedure for a more detailed description of the process, as well as north when performing the closure of the abdominal cavity by anatomical planes, often despised by professionals in the area.

## **MATERIAL AND METHOD**

The research was carried out at the New Hope Medical School (FAMENE), in the municipality of João Pessoa, state of Paraíba. The population consisted of cadavers from the Anatomy Laboratory, referring to the

Extension Project, Applied Human Anatomy of the medical course of the New Hope Medical School and the sample consisted of one (01) of these cadavers. For the selection of this sample, the following exclusion criteria were considered: female cadaver with unexplored abdominal area. The instruments chosen to perform the procedure were cotton thread to perform the chosen technique, as well as curved Kelly tweezers and curved Metzenbaum scissors. After the exposure and evaluation of the structures, a photographic camera was used to photograph them, to be exposed as data in the research. The procedure was performed as follows: incision points were marked for the opening of the abdominal cavity, evidencing the anatomical planes addressed during the surgical procedure of bilateral tubal ligation by laparotomy, as well as the procedure related to the ligation itself through the aforementioned instrumental.

The exposure of the structures will occur after classical incisions and dissection procedures, as provided for by Cunningham's manual of practical anatomy. The research was conducted showing all the anatomical plans involved in the operation in question, the correct ways to approach them, as well as the precise description of the ligation procedure, recorded in step-by-step photos for better didactics.

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## **RESULT AND DISCUSSION**

To demonstrate the path of the bilateral tubal ligation, the dissection of the cadaver was performed initiated by the opening of the skin (Figure 1), then the opening of the subcutaneous layer (Figure 2) and the sheath of the rectus abdominal muscle (Figure 3) was performed, which showed the muscle mentioned together with the pyramidal (Figure 4), the opening of the

rectum abdominal muscle (Figure 5) and the parietal peritoneum (Figure 6), finally reaching the abdominal cavity. The Pomeroy technique was then performed to perform the procedure, which consists of apprehension of the follow-up being sterilized with atraumatic tweezers, forming a loop (Figure 7); use of an absorbable yarn (a cotton thread was used for the demonstrative purpose) to perform a knot at the base of the handle (Figure 8); section of the segment with the aid of scissors (Figure 9); and use of the wire for a few more nodes at the base of the two ends resulting from the cut (Figure 10).

## **CONCLUSION**

Through the exposure of the facts and considering the clinical importance of the ligation procedure studied in this project, as well as reports of research and journals about the existing ways of performing the procedure, added to the verification of them during the dissection performed at the New Hope School of Medicine, it is noted that it is necessary to study further with a detailed description of this surgery to clarify and facilitate the study of med students improvement in the performance of such a procedure, aiming at the patient's well-being.



Figure 1. Visualization of skin opening

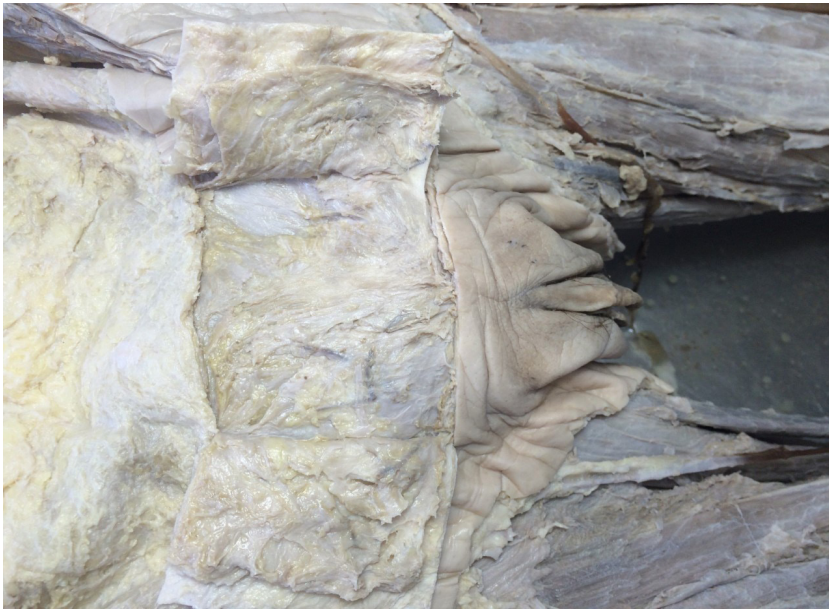


Figure 2. Visualization of a subcutaneous tissue opening



Figure 3. Visualization of the opening of the abdominal rehest muscle and pyramidal muscle



Figure 4. Visualization of the opening of the rectum abdominal muscle



Figure 5. Visualization of parietal periton opening

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