



## Spontaneous Pregnancy after Bilateral Tubal Ligation: A Rare Occurance

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### Authors' contributions

This work was carried out in collaboration between all authors. Authors KT and PA reviewed the first draft of the manuscript. Author SB summarised the case and wrote the draft of the manuscript. Author SA managed the literature searches. All authors read and approved the final manuscript.

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Case Study

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### ABSTRACT

Bilateral tubal ligation is a form of female sterilization. It is the most commonly used method of family planning worldwide and it is a permanent method of fertility control. However the failure rate is 0.1 – 0.8%.

A case report of a booked Gravida 5, Para 3+1, Alive 3 who had two previous Caesarean Sections and a previous Uterine Rupture is presented. She had a Bilateral Tubal Ligation (BTL) performed. She however presented six years after this with a spontaneous pregnancy. She presented in the first trimester, the pregnancy was followed up and she eventually had elective caesarean section and repeat bilateral tubal ligation.

**Keywords:** Spontaneous; pregnancy; bilateral tubal ligation.

### 1. INTRODUCTION

Tubal ligation is a surgical procedure where each fallopian tube is permanently blocked by means of surgery in order to prevent pregnancy. This

could be indicated for family planning services, socioeconomic or medicosurgical (therapeutic) reasons. The time of operation could be within seventy two hours of delivery or as an interval procedure done from three months following

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delivery or abortion. Bilateral Tubal Ligation (BTL) could be performed by laparotomy or laparoscopically through the abdominal or vaginal routes. There are various techniques of performing the procedure but the Pomeroy's technique is the commonest [1] and was used for the index patient. Failure rate of Pomeroy's technique is 0.1 -0.5% [2].

Failure of tubal ligation could occur following recanalisation or development of a fistula, incomplete or inadequate closure of the tube and a misplaced device used in occlusion of the fallopian tube [3]. Pregnancy may occur when a different structure is misidentified as the fallopian tube [3].

## 2. CASE REPORT

A thirty two year old Gravida 5, Para 3 + 1, Alive 3 whose last child birth and last pregnancy were six and four years prior to presentation respectively presented to the Gynaecological Emergency Clinic of Usmanu Danfodiyo University Teaching Hospital (UDUTH) with three months history of amenorrhoea and pregnancy symptoms. There was no history of lower abdominal pain or bleeding per vaginam.

She had two previous caesarean sections in her first and second pregnancies on account of prolonged labour due to malposition and failed vaginal birth after caesarean section. In her third pregnancy she had uterine repair and BTL on account of ruptured uterus. The patient had spontaneous pregnancy four years after the BTL which ended up as a spontaneous abortion at about eight weeks of gestation. The post abortal period was uncomplicated, though she did not present to our facility then.

On examination, her vital signs were normal. She was not pale and not in painful distress. Her pulse rate was 96 beats per minute and the blood pressure was 100/70mmhg. An abdominal examination revealed a midline subumbilical scar, there was no area of tenderness. The uterus was not palpable per abdomen. A vaginal examination revealed normal vulva and vagina with a bulky uterus of about ten weeks size. There was no adnexal tenderness or mass felt.

The possibility of pregnancy was entertained and this was supported by a positive urine pregnancy test and confirmed with a pelvic ultrasound which revealed a single viable intrauterine fetus at nine weeks three days. The expected date of delivery was 16<sup>th</sup> of July 2016. She was counseled on

her condition and the need for an elective CS and repeat BTL. She was booked for antenatal care and was seen fortnightly until she was thirty weeks of gestation when she was admitted into prenatal ward. The patient was closely monitored and two units of blood were grouped and cross matched for her. She had two doses of dexamethasone at thirty two weeks gestation and elective CS and repeat BTL at thirty five weeks gestation.

Intraoperatively, there were severe adhesions involving the anterior abdominal wall and upper segment of the uterus. The bladder was adhered to the lower uterine segment. The right tube was identified and traced to the fimbrial end. There was a defect in the lateral one third with a fistulous tract connecting the proximal end of the tube to the peritoneal cavity. The left tube was buried in adhesions hence the fimbrial end was not identified. The proximal and distal ends were continuous with a defect of less than 1cm in between. The patient remained stable post operatively till the time of discharge.

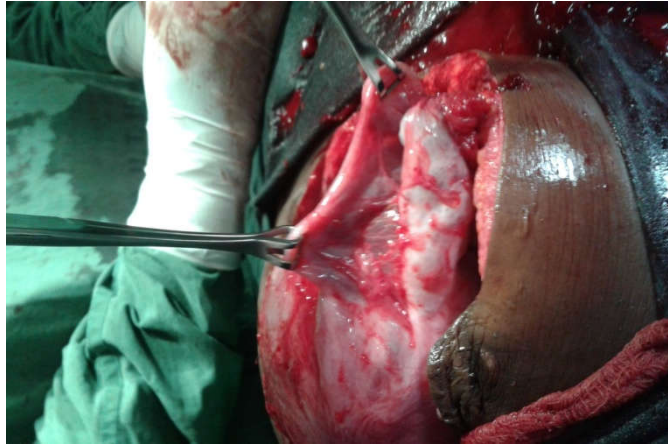
## 3. DISCUSSION

Tubal ligation is one of the most effective contraceptive methods if performed correctly. The risk of being pregnant after tubal ligation is lower than the risk in the use of other methods of contraception. Although it is a very effective method of contraception, it can in extremely rare cases fail to prevent pregnancy as in the case presented. Similar cases of twin gestation, ectopic and heterotopic pregnancies after bilateral tubal ligation or salpingectomy were also reported [3,4,5]. According to the U.S Collaborative Review of Sterilisation (CREST), the ten year cumulative rate of failure of tubal ligation was 1.85% for all types of ligation methods [6]. This study also found that the failure rates were higher with techniques that cause least damage to the tubes such as use of clips and clamps. The failure rates were highest with Hulka clips (36.5 per 1000), followed by silicone bands or rings (17.1 per 1000) then partial salpingectomy and unipolar coagulation (7.5 per 1000) [6]. The Pomeroy method has a failure rate of 0.1 -0.5% [6].

The patient was admitted early for close monitoring because she was at risk of having spontaneous uterine rupture. Sterilisation failure has been shown to be highest between 1-5 years and tuboperitoneal fistula was the commonest cause [5,6]. The younger the woman at the time

of tubal ligation, the greater the chance of ligation failure. This could possibly be due to the fact that a younger woman is likely to be more fertile than a woman in older age. If pregnancy occurs due to tubal ligation failure, chances of an ectopic

pregnancy are very high [7,8,9]. The most likely cause of failure in this patient is combination of fistula formation and recanalisation. When tubal sterilization fails, it is suggested that bilateral salpingectomy is the correct treatment [6,10].



**Fig. 1. Recanalised right fallopian tube**



**Fig. 2. The left fallopian tube**



**Fig. 3. Stump of the right fallopian tube after repeat BTL**

#### 4. CONCLUSION

In conclusion, tubal ligation is one of the most effective ways to prevent pregnancy. Although the possibility of becoming pregnant after BTL is low, the chance is still there. Unfortunately, after the procedure, the risk of experiencing an ectopic pregnancy increases. So any patient who misses her period with pregnancy symptoms after tubal ligation should seek for medical attention immediately.

#### CONSENT AND ETHICAL APPROVAL

As per university standard guideline, participant consent and ethical approval have been collected and preserved by the authors.  
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#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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