Intestinal perforation - A rare complication of tubal ligation

A G Pathak1*, R K Gadhari2, N A Devraj3, S A Bora3
1Associate Professor, Department of Forensic Medicine & Toxicology, SBH Government Medical College & Civil Hospital, Dhule
2Assistant Professor in Dept of Forensic Medicine & Toxicology, SBH Government Medical College & Civil Hospital, Dhule
3Assistant Professor Dept of Pathology, SBH Government Medical College & Civil Hospital, Dhule

ABSTRACT
Even though the rare, but the most common complication of tubal ligation is unrecognized perforation of the ileum. Due to this the patient suffers physically, mentally, financially and there may be a loss of precious life. As a part of tubectomy training, more emphasis should be laid on how to suspect and diagnose the complications of tubal ligation so that these can be managed timely and efficiently.

Keywords: tubal ligation, intestinal perforation, septicemia, medical negligence

INTRODUCTION
Even though the rare, but the most common complication of tubal ligation is unrecognized perforation of the ileum. Due to this the patient suffers physically, mentally, financially and there may be a loss of precious life. Tubal ligation is done on the woman who is in the child bearing age, and in most of the cases she is young i.e. below 30 years of age. Mostly it is done after two live births. After the death of the mother as a complication of tubal ligation, the innocent children have to grow up without the love and care of their mother. Tubal ligation under local anesthesia is a safe, effective, low cost technique well suited for developing countries. The death rate after tubal ligation is 2-10 per 1,00,000 sterilization and is mainly due to general anesthesia or vascular injuries. This paper reports one recent case of perforation of the small intestine secondary to tubal ligation by mini laparotomy approach. Mini-laparotomy is preferred with use of a 2-3cm mid-line vertical or transverse supra-pubic incision.

CASE REPORT
28 years old woman, Gravida 3, Para 3, underwent tubal ligation on 30/09/2014. During pre-anesthetic check-up no other abnormality was noted and the patient was declared fit for the operation. The operation was done at primary health center of a village.

Before operation local anesthesia was given after doing sensitivity test along with benzathien penicillin and tetanus toxoid injection. She was afebrile, her BP was 120 mmHg and pulse was 80 per minute. The patient was kept admitted for 3 days to the hospital after operation on the 3rd day patient developed low grade fever and complained of abdominal pain, burning pain in both feet. She was treated with intravenous fluid therapy with ringer lactate 500cc & injection dexamethasone 2cc. On 4th day the patient vomited once and suddenly collapsed in the toilet and within five minutes of the incident, declared dead on 04/10/2014 at 06:30 hours.

The dead body was brought for postmortem examination at Govt. Medical College and Hospital, Dhule. Postmortem examination was carried out by team of doctors from department of forensic medicine, department of pathology, department of obstetrics and gynecology and department of surgery. On external examination of the dead body abdomen was found distended and there were no signs of decomposition. Vertical sutured wound of length 5cm present over midline of lower abdomen in hypogastric region, with 3 intact stitches in situ noted. On internal examination, following positive autopsy findings were noted-

[1] Lung- congested and edematous with pus flakes present over lower lobes of both lungs. Weights- right- 325gm, left- 300gm.

[2] Peritoneum and peritoneal cavity- Pus flakes present over omentum at places with foul smell present. Pyc-peritoneum of 400cc present along with faecal contamination. Omentum and coils

*Corresponding Author:
A G Pathak
Associate Professor & Head of Department
Department of Forensic Medicine & Toxicology,
SBH Government Medical College & Civil Hospital
Dhule, Maharashtra
Email id: ajitgpathak1@gmail.com
of intestines were adherent to each other at places.
[3] Small intestine inflamed, round ileal perforation of diameter 0.5 cm noted in the mesenteric border situated 3 feet proximal to ileo-caecal junction
Following sealed bottles were preserved for accessory examinations -
1. One sealed bottle containing pieces of brain, lungs, heart, liver, spleen, kidneys, uterus with fallopian tubes & piece of intestine having perforation for histo-pathological examination
In all organs mild inflammatory infiltrate associated with bacterial contamination was noted on histo-pathological examination. Gangrenous changes were noted in the part of small intestine with perforation. Sections from normal appearing wall of small intestine showed focal necrotic mucosa, while sections from gangrenous appearing wall of small intestine showed necrotic wall of intestine. Microbiological examination revealed Klebsiella species in blood and peritoneal fluid samples. HPLC (high performance liquid chromatography) revealed normal pattern suggestive of non-sickle pattern. So considering clinical history, postmortem findings and laboratory investigations the cause of death was given as “septicemia in a case of peritonitis due to ileal perforation in an operated case of tubal ligation”
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DISCUSSION

Very few studies on this topic has been performed world-wide. Our post-mortem finding corroborates the complication mentioned by studies done by other authors \cite{4,5,8}. Mini-laparotomy in the United States often is used preferentially among women considered to be at increased risk for laparoscopy \cite{4,5,8}. The operating surgeon should have noticed perforation at the time of surgery or at least he should have diagnosed it when the patient was admitted in the hospital for 3-4 days with careful history, clinical examination and from investigations like complete blood count, blood culture, ultrasonography of abdomen, X-ray of chest and abdomen, peritoneal tapping etc. But it didn’t happen. Perforation and peritonitis was detected during post mortem examination. It may not amount to negligence, if perforation occurs during tubal ligation and immediately sutured with guidance from general surgeon but it amounts to negligence in above case. Some of the most serious complication of both interval mini-laparotomy and laparoscopy occur during abdominal entry of an instrument. Bladder laceration during supra-pubic mini-laparotomy can occur, but usually it is recognized during surgery and repaired easily. Major vessel and bowel laceration during needle or trocar insertion for laparoscopy are more difficult to recognize or repair, and delayed treatment of these injuries can be fatal. Meticulousness is required to reduce the risks of abdominal entry of a surgical instrument \cite{4,5,8}. If laparoscopic sterilization would have performed in this case then the chances of bowel injury/peritonitis would have been greatly reduced\cite{6}. Rupture of the small or large intestine is less damaging but, if survival continues, will inevitably lead to generalized peritonitis unless vigorously treated. Open wounds of abdomen will introduce organisms from outside into the peritoneal cavity\cite{7}. Caution is needed at autopsy to differentiate the dark red color of loops of intestine due to post-mortem hypostasis from true infraction. Hypostasis is seen to be interrupted when the gut is stretched out, due to alternate dependent loops, whereas real necrosis is usually continuous and the serosa is dull and friable\cite{6}. In a survey of deaths attributable to tubal sterilization in the United States from 1977 to 1981, 29 deaths were identified: 11 followed complications of general anesthesia, 7 were caused by sepsis, 4 were caused by hemorrhage, 3 were caused by myocardial infarction and 4 were related to other causes \cite{4,5,8}. Klebsiella is the second most populous member of the aerobic bacterial flora of the human intestine. It has become very important cause of nosocomial infection, even replacing E coli in some centers. It causes pneumonia, urinary tract infection, septicemia, abscess and meningitis \cite{9}.

CONCLUSION

As a part of tubectomy training, more emphasis should be laid on how to suspect and diagnose the complications of tubal ligation so that these can be managed timely and efficiently. Tubal ligation preferably should be performed at rural hospitals (secondary care centres) or at tertiary care center to minimize the complication associated with surgery. So that precious lives can be saved and there will be more compliance from the patient, relatives and the society in general for this national birth control program.

REFERENCES

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