



COMPARITIVE STUDY OF INCIDENCE OF INCISIONAL HERNIA IN TUBECTEMY SCAR WITH ABSORBABLE VERSUS NON ABSORBABLE SUTURE.

Dr Swapna Lekkala

Dept of Obstetrics & Gynecology, Apollo institute of medical sciences, Hyderabad, Telangana.

Dr G.suneel Kumar*

Dept of Emergency Medicine, Nizams institute of medical sciences, Hyderabad, Telangana. *Corresponding Author

ABSTRACT AIMS:- To compare the incidence of incisional hernia after tubectomy in cases of closure with absorbable suture versus non absorbable suture.

SETTING:- Teaching hospital, Hyderabad, Telangana state.

METHODS AND MATERIAL:- 107 patients who underwent tubectomy between Feb 2007 and Dec 2009. Out of 107 cases, 52 cases are closed with absorbable suture and 55 cases are closed with non absorbable suture. All the cases were followed for a period of 3 years and were subjected to USG of abdomen to rule out incisional hernia.

RESULTS:- out of 52 cases (Group A), 6 cases got incisional hernia and out of 55 cases (Group B) only 2 cases have shown incisional hernia.

CONCLUSION:- Incidence of incisional hernia is less in cases where incision is closed with non absorbable suture.

KEYWORDS : Tubectomy scar, Comparison, Absorbable versus non absorbable suture.

INTRODUCTION:-

Incisional hernia are the result of dehiscence of the abdominal wall which holds the viscera. It results most commonly due to inappropriate healing after a surgical incision. Two major contributing factors for dehiscence of abdominal layers after surgery are faulty surgical technique and infection.

Tubectomy is the most common method of sterilization in females and it is one of the most commonly performed surgery by gynecologists in which fallopian tubes are either tied or severed by electro cautery to prevent ovum from reaching the sperms and vice versa. This is a permanent method of sterilization.

Given the large number of tubectomy procedures and also large incidence of incisional hernias through tubectomy scar, a study has been conducted to identify whether the type of suture material selected for closure will make any difference in outcome.

METHODS:- This study is carried out at Deccan college of medical sciences, Hyderabad, Telangana by department of Obstetrics & Gynecology and Department of General surgery. Patients who came for interval sterilization by tubectomy are selected and segregated to two groups. 107 patients who underwent tubectomy between Feb 2007 and Dec 2009 are selected. Out of 107 cases, 52 cases are closed with absorbable suture and 55 cases are closed with non absorbable suture. All the cases were followed for a period of 3 years and were subjected to USG of abdomen to rule out incisional hernia.

The group which underwent abdominal closure with absorbable suture are closed with number 1 cat gut and the other group were closed with number 1 polypropylene suture. Selection of suture material is done alternatively between absorbable and non absorbable sutures for patients. The selection of suture material is explained to patients and also to their relatives and their written consent was taken.

Tubectomy procedure in the study subjects was done by open method in all cases. Length of incision is more or less same in all cases except when the patient is obese. Infra umbilical midline incision was given for all subjects. Closure of the abdominal wall was done by single layer mass closure. Those patients having diabetes or those suffering from chronic cough were excluded from study. Procedure was abandoned in one patient as fallopian tubes could not be identified and it was advised for her spouse to undergo vasectomy. Post operatively all the patients were given same antibiotics and same analgesics. 11 patients did not turn up for follow up for various reasons.

RESULTS:- 52 cases were closed with absorbable suture where as 55 cases were closed with non absorbable suture. No single mortality is reported in both the groups.

Among 52 cases which were closed with absorbable suture six cases developed infection and 4 cases needed prolonged antibiotics where as among 55 cases which were closed with non absorbable suture 4 cases developed wound infection and 3 cases needed prolonged antibiotics.

The duration of hospital stay, number of antibiotic & analgesic doses and the mean operating time in both the groups is almost similar. The mean operating time in both the groups is 38 minutes. Number of antibiotic doses were 6 and the number of analgesic doses were 4. The period of nil by mouth after surgery was same in both the groups.

DISCUSSION:- Tubectomy is a method of permanent sterilization in women. First tubal sterilization was carried out by Samuel Smith in 1880. But because of the risks involved with laparotomy for sterilization tubectomy remained unpopular until middle of 20th century. In 1970s world wide popularity of tubal sterilization is increased dramatically due to invention of mini laparotomy technique. This technique requires a 2.5 to 3 centimeter supra pubic incision. With the advent of mini laparotomy, female sterilization by tubectomy has become the most commonly performed method of sterilization. Male sterilization by vasectomy accounts only for a small percentage of sterilization procedures. In the world the ratio of tubectomies to vasectomies is 3:1. Female sterilization can be performed after caesarean section or after abortion/delivery or after some time unrelated to pregnancy which is called interval sterilization.

All the cases in this study were done under spinal anaesthesia though other methods like local anaesthesia and general anaesthesia are also possible. Local anaesthesia is difficult in patients with anxiety or obesity.

Coming to the type of suture material that was used in the study, mini laparotomy incision was closed either with number 1 cat gut or with number 1 polypropylene. Surgical gut suture is an absorbable, sterile surgical suture composed of purified connective tissue (mostly collagen) derived from either the serosal layer of beef (bovine) or the submucosal fibrous layer of sheep (ovine) intestines. The membrane is chemically treated and slender strands are woven together to form a suture. Surgical gut sutures are available in plain or chromic.

PROLENE Sutures are non-absorbable, sterile surgical suture composed of an isotactic crystalline stereoisomer of polypropylene, a synthetic linear polyolefin. The suture is pigment blue to enhance visibility. Prolene is a synthetic, monofilament, nonabsorbable polypropylene suture. It is indicated for skin closure and general soft tissue approximation and ligation. Its advantages include minimal tissue reactivity and durability. Disadvantages include fragility, high plasticity, high expense, and difficulty of use.

CONCLUSION:- This study which is aimed to compare the incidence

of incisional hernia in subjects when abdominal closure was done with absorbable catgut suture versus non absorbable poly propylene suture. Its found that non absorbable suture is superior interms of less incidence of wound infection and also less incidence of incisional hernia .

REFERENCES

1. Buchnall TE, Ellis H. Abdominal wound closure: a comparison of monofilament nylon and polyglucolic acid. *Surgery* 1981;89:672
2. Ellis H ,GajrajH,George CD. Incisional hernias.when do they occur?. *Br J Surg* 1983;70:290
3. HardingKG,Mudge M et al.late development of incisional hernia:an unrecognised problem. *Br Med J*1983;286:519.
4. RichardsPC,BalchCM,AldreteJS. Abdominal wound closure:A randomised perspective study of 571 patients comparing continuous versus interrupted suture techniques. *annSurg* 1983;197:238.
5. Chevrel JP.Post operative complications .ChevrelJP, *Surgery of the abdominal wall*. Berlin,Germany:Springer-Verlag 1987:83
6. Gigher JC,Irvin TT etal.A controlled clin 1993;176:213.icaltrial of three methods of closure of laparotomy wounds. *Br J Surg* 1975;62:823.
7. RubioPA. Closure of abdominal wounds with continuous non absorbable suture :experience in 1697 cases. *Intsurg* 1991;76:159.
8. EfronG. Abdominal wound disruption. *Lancet* 1965:1:1287
9. JuddES. the prevention and treatment of ventral hernia. *SurgGynecolobstet* 1912;14:175
10. GreeneMA,MullinsRJ,MalangoniMAetal. Laparotomy wound closure with absorbable polyglycolic acid mesh. *SurgGynecolObstet*
11. BishopE,Nelms WF. A simple method of tubal sterilization. *NY state J Med* 1930;30:214
12. Marcy HO. A new use of carbolised catgut sutures. *Boston med surg J* 1871;83:315
13. GallieWE,LeMesurierAB. The use of living suture in operative surgery. *Can Med Assoc J* 1921;11:504
14. AriesLJ. experimental studies with synthetic fibre (nylon) as a buried suture. *Surgery*1941;9:51.
15. MelickDW. Nylonsuture. *annsurg* 1942;115:475
16. Localio SA,CasaleW,HintonJW, Wound healing-experimental and statistical study. *Experimentalobservations. surgGynecObstet* 1943;77:243
17. JenkinsSD,Kramer TW et al. acomparison of prosthetic materials used to repair abdominal wall defects. *surgery* 1983;94:392.
18. HodgsonTJ,CollinsMC,. Anterior abdominal wall hernia:diagnosisby Ultrasound and tangential radiographs. *ClinRadiol* 1991;44:185
19. Gallie WE ,Le MesurierAB. Living sutures in the treatment of hernia. *Can Med Assoc J* 1923;13:468
20. DeStwfanof, GreenspanJR, Ory HW etal. Demographic trends in tubal sterilization:united states *Am J public health* 1982;72:480
21. EmensJM, OliveJE. Timing of female sterilization. *BMJ* 1978;2:1126
22. Irving FC. Tubalsterilization. *Am J ObstetGynecol* 1950;60:1101
23. LaydePM, PetersonHB, DickerRC, etal. Risk factors for complications of interval tubal sterilization by laparotomy. *ObstetGynecol* 1983;62:180
24. LiskinL, PileJM, Quillen WF, Vasectomy-safe and simple. *Pop Rep D*1983;4:D61
25. Marquette CM, KooninLM, Antarsh L et al . Vasectomy in the united states 1991. *Am J Public health*1995;85:644
26. Peterson HB, Xia Z, Wilcox LS et al. Pregnancy after sterilization with bipolar electro coagulation. *ObstetGynecol* 1999;94:163
27. SchwartzD, WingoPA, AntarshL, et al Female sterilization in united states , 1987. *Fam plannPerspect* 1989;21:209.
28. Uchida H. Uchida tubal sterilization. *Am J ObstetGynecol* 1975;121:153
29. Wortman J. Female sterilization by minilaparotomy. *Pop Rep C* 1974;5:c-53.