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Retrospective Study to Analyse the Success Rate and Pregnancy Outcome in Women of Proximal Tubal Obstruction of Hysteroscopic Cannulation under Laparoscopic Guidance

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Abstract:-

Introduction: WHO estimated that tubal factor contribute to about 30% of causes of total female infertility.Proximal obstruction at the uterotubal junction constiyutes 10% to 15%. Most common treatment considered for treatment for tubal infertility is (IVF). Although IVF is popular treatment for tubal infertility. But it is more costly and sometimes rejected by patients because of social or moral reasons

Aims and Objectives: To analyse the success rate and pregnancy outcome in women of proximal tubal obstruction of hysteroscopic cannulation under laparoscopic guidance

Methods and materials: It is Retrospective outcome analysis done in a private hospital. Women with bilateral proximal tubal obstructions as the only cause of infertility were taken in the study.

Interventions: Laparoscopy – guided hysteroscopic tubal catheterisation .

Results: Only the 1st spontaneous conception was considered .Of 49 women included , patients underwent successful tubal cannulation were 32 (unilateral or bilateral) .17 were unsuccessful.15 pregnancies occurred within 1 year of which 2 were ectopic pregnancies.

Conclusion: Successful tubal cannulation led to significant improvement in pregnancy. Retrospective study to analyse the success rate and pregnancy outcome in women of proximal tubal obstruction of hysteroscopic cannulation under laparoscopic guidance.

I. INTRODUCTION

WHO estimated that tubal factor contribute to about 30% of causes of total female infertility. According to ASRM reports contribution of proximal tubal blockage is 10% to 25%.–There are various causes of proximal tubal obstruction like tubal spasm, debris, endometriosis, chronic salpingitis, adhesions and fibrosis. Pelvic inflammatory disease contribute more than 50% of cases.[5] Normal intramural part of fallopian tube ranges from 1.5 to 2.5 cms. It take straight to slightly curved course at uterotubal part. It is of 0.8mm to 1.2mm diameter and can accommodate a cannulae of 1 to 1.2 diameter.

The interstitial portion of fallopian tube is a region of complex anatomy and has physiological response to various internal and external stimuli, so constriction can happen from external interference in uterine cavity.[13]

That is why sometimes bilateral tubal spasm can occur during the process of HSG. There are many techniques described in literature to overcome the tubal occlusion like fluoroscopic guided trancervical cannulation, hysteroscopy and laparoscopy,falloscopy. Although the gold standard for assessing tubal patency is Laparoscopy with dye test but hysterosalpingography (HSG) is the simplest way and used widely as it can be done as outpatient procedure without anaesthesia. Laparoscopic guided Hysteroscopic proximal tubal cannulation plays an important role for management of women of proximal tubal obstruction. The first intrauterine pregnancy after hysteroscopic tubal cannulation reported by Daniell et al.[2]

Although IVF is popular treatment for tubal infertility. But it is more costly and sometimes rejected by patients because of social or moral reasons.

II. METHODS AND MATERIAL

It is a retrospective study of fallopian tube recanalization done for proximal tubal obstruction over a period of 4 years in a multispecialty hospital from 2016 to 2020. All 58 women, undergone hysterosalpingography for detection of occlusion at proximal tubal obstruction and the diagnosis was confirmed at laparoscopy.

Hysteroscopic cannulation: From the past decade because of advancement of hysteroscopy and introduction of small-caliber endoscopes, micro hysteroscopy, and use of 3D camera for hysteroscopic evaluations, have exetended the use of hysteroscopy to treat tubal obstruction at proximal part apart from new reproductive technologies.[13] Under laparoscopic, guidance the hysteroscopic approach is used for tubal cannulation . Laparoscopy also helps to asses other pelvic pathologies of infertility and for confirmation of obstruction of tube. It helps to monitor the procedure under direct vision. In hysteroscopy also we can direct visualize the uterotubal junction,hence it is considered to be the best approach for tubal cannulation.

The hysteroscopic cannulations were done under Operative hysteroscope was introduced with normal saline as distending medium. Cannulation set (krishco's) was used for cannulation. Vaginscopy and cervix holding both approaches were used. The tube was cannulated beyond the

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identified area of obstruction on HSG. After cannulation ,a tubal dye study was done to confirm patency by laparoscopically.

Design and setting: It is a retrospective study of women who underwent fallopian tube recanalization procedures for proximal tubal obstruction. It was conducted in a multispeciality hospital. It is conducted over a period of 4 years from january 2016 to january 2020. 58 women who undergone hysterolaparoscopy for proximal tubal obstruction aged between 25 to 45 were taken in the study.

A. Inclusion criteria:

- All Patients with proximal tubal obstruction were taken.(HSG report with confirmation on laparoscopy findings).

B. Exclusion criteria

- Women who underwent IVF without giving trial for spontaneous conception without any reasons.
- Women with low ovarian reserve.
- Women with abnormal husband semen analysis who underwent IUI.

The patients with significant defects in the fertility factors other than proximal tubal obstruction were excluded from study. This avoids masking of the true pregnancy outcome after tubal cannulation, by preventing the possible interferences imposed by other defects in the fertility factors. Out of 58 women only 49 were included in the study. Out of 58 women, 5 lost follow up,2 women were of low ovarian reserve,1 women underwent IVF,1 women underwent IUI due to male factor infertility (as shown in the flow chart).The following table is showing age wise distribution of patients. The age of women were from 25 to 45yrs, 20 women were with primary infertility and 29 women were of secondary infertility. (table1)

Age	frequency	Primary infertility	Secondary infertility	Pregnancy success	Non pregnant
25-29	2	2	0	1	1
30-34	19	11	8	6	13
35-39	21	9	12	6	15
40-45	7	3	4	2	5
Total	49	20	29	15	34

Table 1: Distribution of patients according to age and type of infertility

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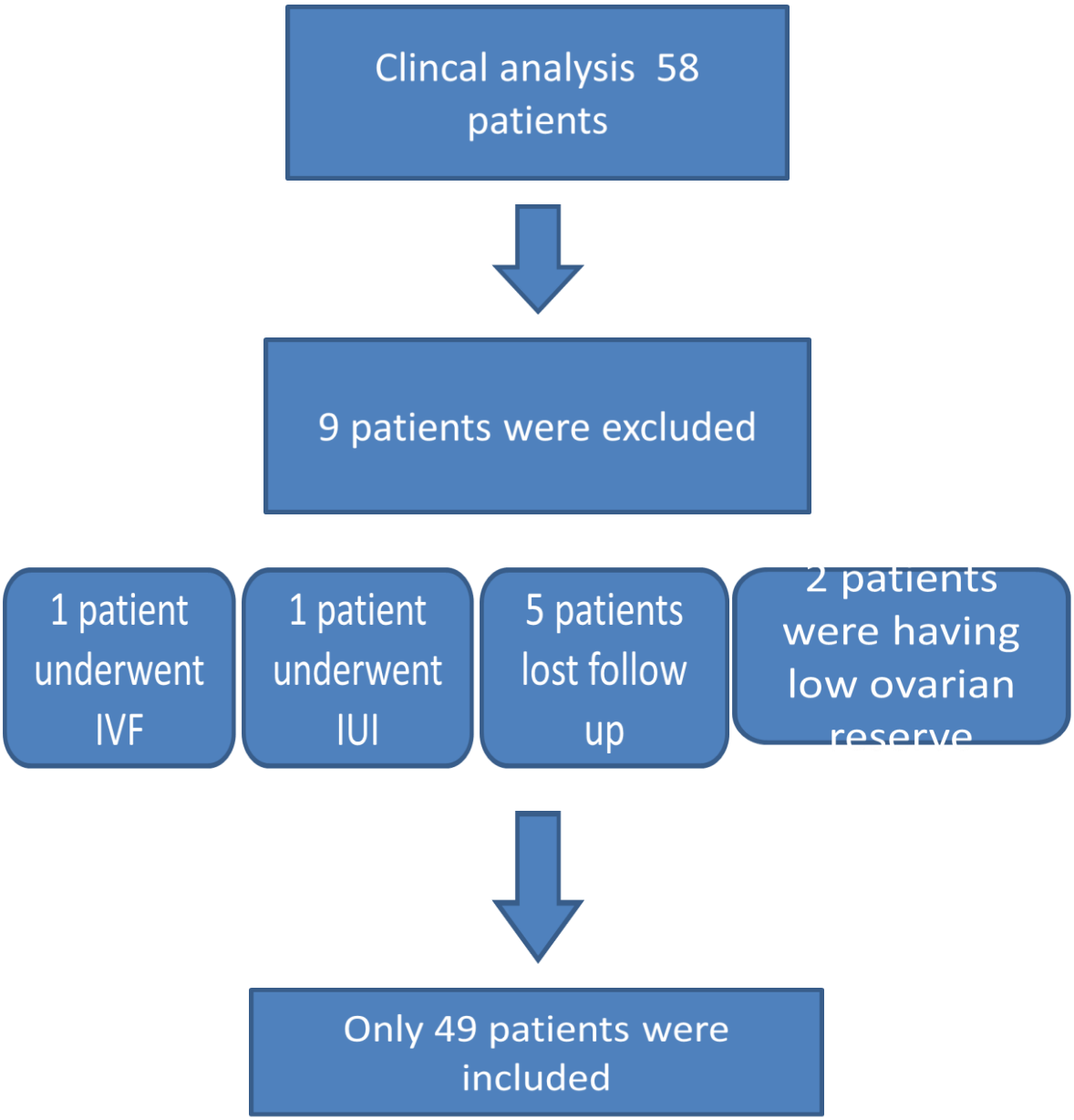

Flow chart 1: Exclusion of patients

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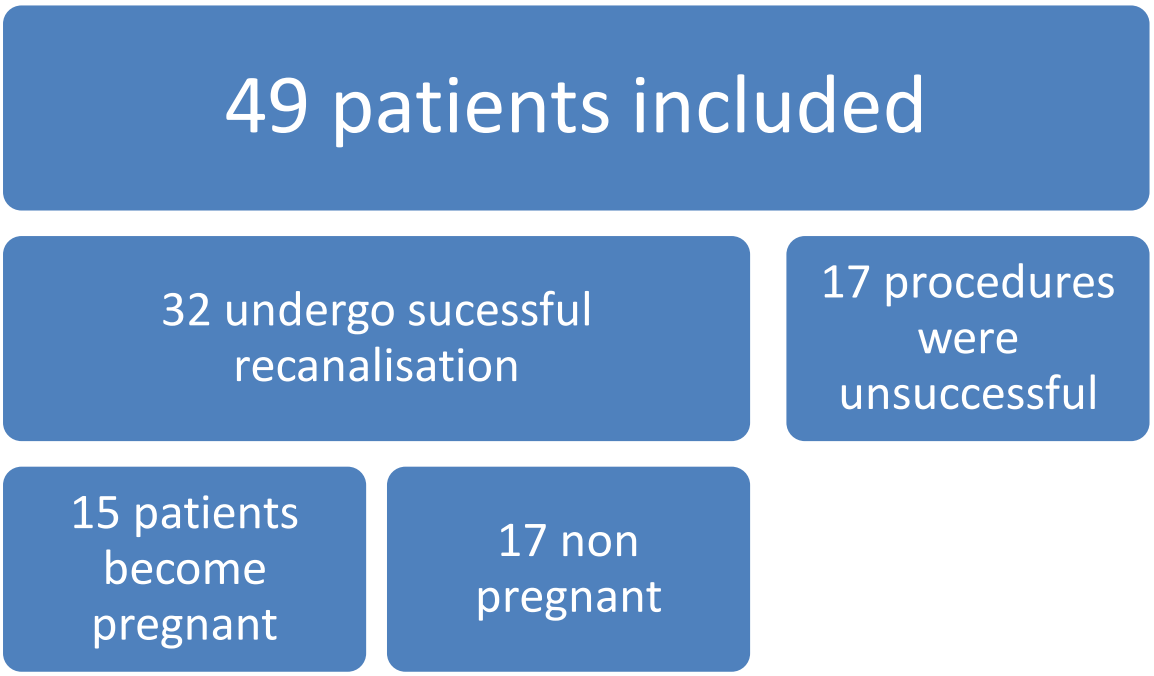

Table 2: showing successful and unsuccessful recanalisation:

III. RESULTS AND OUTCOMES

Total 58 women who undergone hysterolaparoscopic tubal recanalisation for proximal tubal obstruction from 2016 to 2020 were assessed for eligibility but only 49 were included. (flow chart 1).The relationship between age, type of infertility and pregnancy outcome is shown in table 1. There is no statistically significant difference between age of patients and infertility types with pregnancy outcome.20 (40.8%)women have primary infertility while 29(59.2%) women have secondary infertility giving ratio of 1:1.5. Out of 49 included women , 32 were successful (unilateral or bilateral).Cannulation procedure failed in 17 women. Out of 32 ,15 became pregnant. Out of 15 pregnancies 2 were ectopic(31.25% of included patients or 46.875% of successful cannulation)(Table2).

17 were unsuccessful ,among them 4 patients were having associated pelvic pathologies like pelvic adhesions and pelvic endometriosis. 2 patients were having tubal perforation during the procedure.

Out of 49 women 46 (93.8%) were of bilateral tubal obstruction and 3 (6%) were of unilateral tubal obstruction (previous unilateral salpingectomy).

Total 95 tubes were there ,57 tubes undergo successful recanalisation(60%),32 women undergone successful recanalization giving a rate of 65.30% per women and 60% per tube.Out of 32 successful cannulation 15 conceptions were there ie pregnancy rate of 46.8% of successful cannulations and 31.25% of included patients with in 12 month of follow up.

- Out of 15 ,2 were ectopic pregnancies.

IV. DISCUSSION

Our results show that the hysteroscopic tubal cannulation under laparoscopic guidance has improved significantly the prognosis for intrauterine pregnancy in women with proximal tubal obstruction in infertile women.(Table 2) Intrauterine pregnancy rates with transcervical cannulation procedures for proximal tubal obstruction have been reported as 17% to 30% in various series.[7] Our study shows the conception rate of 64%.Hysteroscopic tubal cannulation has advantage of over other transcervical cannulation techniques as it is done under direct vision with laparoscopic guidance and after confirmation of proximal tubal obstruction by chromopertubation. There are recent reports of successful cannulations under fluoroscopic guidance done for proximal tubal injections failure at HSG[12]. The diagnostic reliability of single HSG is less than 75%.[14] inspite of use of antispasmodic agents at the time of HSG or the use of laparoscopic chromopertubation rate of falsely positive proximal tubal obstruction were there.[9,1] In our study false positive rates were 16.32%. Our results are comparable with the study by Allahbadia et in which hysteroscopic recanalisation of cornual obstruction were done.They were able to cannulate 30 out of 34 tubes.(88.23%). In our study it is 68.8%. The results of current study are similar to those by sulak et al ,Fortier and Haney, (43.59%).[4,10]

In short in a large reproductive surgery centre , with surgeons skilled in the technique hysteroscopic procedure, higher intrauterine pregnancy rates were achieved with hysteroscopic tubal cannulation . In all IVF cycles Tubal factor contributes to 36%.[6] The cost of estimation of IVF is 1.75 lakhs for 1 cycle whereas that of hysteroscopic cannulation is of 35000. Study by Lang and Dunaway (1996) have also document that tubal cannulation is more

cost effective than IVF for all women with proximal tubal obstruction.[8]

V. CONCLUSION

- Cost of IVF on average is Rs 1.75 lakh while that of hysterolaparoscopic cannulation is Rs 35000.
- Hysterolaparoscopic cannualtion is safe, costeffective method for proximal tube obstruction.

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