Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: https://saspublishers.com/journal/sjams/home

OPEN ACCESS

Radio-Diagnosis

Evaluation of Efficacy of Fallopian Tube Recanalization in Infertility Patient Secondary to Cornual Block

Dr. Manoher Singh Rathore[1], Dr. Akshara Gupta[2], Dr. Shikha Jain[3*]

[1]DMRD, DNB, Dept. of Radio-Diagnosis, JAH & Group of Associated Hospital, Gajra Raja Medical College, Gwalior, India
[2]Professor, Dept. of Radio-Diagnosis, JAH & Group of Associated Hospital, Gajra Raja Medical College, Gwalior, India
[3]Resident Medical Officer, Dept. of Radio-Diagnosis, JAH & Group of Associated Hospital, Gajra Raja Medical College, Gwalior, India

***Corresponding author:** Dr. Shikha Jain
| **Received:** 05.01.2019 | **Accepted:** 15.01.2019 | **Published:** 30.01.2019
DOI: 10.36347/sjams.2019.v07i01.024

Abstract **Original Research Article**

Background: To identify the cornual block under fluoroscopic guidance in infertility patients and then assess the efficacy of fluoroscopic guided recanalization of fallopian tube in patients with cornual block as cause of infertility. ***Methods:*** In this prospective analysis of 30 infertile patients, we analyzed the cause of infertility by using hysterosalpingography and ultrasonography. The male causes of infertility were ruled out by using semen analysis. In patients with cornual block and no other documented cause of infertility, fluoroscopic guided recanalization of fallopian tube was attempted and one year follow up was done to document pregnancy in the patients. The uterine pregnancy is taken to be the successful endpoint of the study. ***Result:*** We observed the therapeutic effect of hysterosalphingographic study by documenting a patient with successfully relieved right sided cornual block after hyterosalpingography. We were successful in relieving 12 right sided and 8 left sided unilateral cornual block and the pregnancy was confirmed in 5 patients with right sided and 3 patients with left sided unilateral cornual block. ***Conclusion:*** Fluoroscopic guided fallopian tube recanalization is simple outpatient based procedure which could be used to treat proximal fallopian tube block with high success rates and the complication rates are found to be very low as the procedure is non-surgical, minimally invasive and safe. The surgical and other invasive procedures can be used as second line procedure in management of proximal fallopian tube block when the fluoroscopic guided proximal fallopian tube recanalization technique is not suitable due to various technical limitations. Procedures other than fluoroscopic guided proximal fallopian tube recanalization technique are comparatively costly so by using fluoroscopic guided proximal fallopian tube recanalization technique as first line technique the financial burden on the patient for treatment of infertility due to proximal fallopian tube blockage can be minimised.
Keywords: Efficacy, Fallopian Tube, Recanalization, Infertility, Cornual Block.
Study Designed: Observational Study.

INTRODUCTION

Infertility is "a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse (and there is no other reason, such as breastfeeding or postpartum amenorrhoea)."Infertility is a rising global problem. The infertility in couples can be either due to male partner or female partner or both, it is estimated that 20-30% of infertility cases are due to male infertility, 20-35% are due to female infertility, and 25-40% are due to combined problems in both parts, and in 10-20% of cases, no cause is found. There are many causes of infertility like ovulatory dysfunction, tubal pathology and endocrine factors. Various factors responsible for tubal pathologies which result in infertility are pelvic inflammatory disease, previous abortions/miscarriages, cornual polyp, endometriosis, salpingitis isthimica nodosa, ectopic pregnancy, mucus debris [1].

Tubal pathologies are easily diagnosed on hysterosalphingography and are classified as cornual or fimbrial block according to the anatomic location of the blockade in fallopian tube. In our study we studied a minimal invasive method to recanalize the cornual block in infertile women by using fluoroscopic guided recanalization of fallopian tube. Fluoroscopic guidedfallopian tube recanalization has revolutionized the diagnosis and treatment of infertility due to cornual blockade. In fluoroscopic guidedfallopian tube recanalization, a catheter and guide wire system is used to clear proximal tubal obstructions under fluoroscopic

guidance [2]. The recanalization procedure is simple for interventional radiologists to perform and is successfully completed in most patients. Pregnancy rates after the procedure have been observed to be good and the complication rates are minimal. The fluoroscopic guided recanalization of fallopian tube is relatively cost effective as compared to other management options and the patient is mostly comfortable in tolerating the procedure [3].

METHODOLOGY

A group of 30 female patients was taken into study after confirming the unilateral or bilateral cornual block on initial hysterosalpingography which was performed on all patients referred for complaint of infertility from Department of Obstetrics and Gynaecology to Department of Radiology, JAH & Group of Associated Hospital, Gajra Raja Medical College, Gwalior from period of January, 2017 to August, 2018.

In this prospective analysis of 30 infertile patients, we analyzed the cause of infertility by using hysterosalpingography and ultrasonography. The male causes of infertility were ruled out by using semen analysis. In patients with cornual block and no other documented cause of infertility, fluoroscopic guided recanalization of fallopian tube was attempted and one year follow up was done to document pregnancy in the patients. The uterine pregnancy is taken to be the successful endpoint of the study.

The patients satisfying the following inclusion and exclusion criteria were enrolled for the study.

Inclusion criteria

- Women diagnosed with unilateral or bilateral cornual fallopian tube block on hysterosalpingography.

Exclusion criteria

- Patients with mid fallopian or distal fallopian tubal block
- Infertility due to male factor.
- Woman having pelvic inflammatory disease.
- Known allergy to contrast agents.
- Renal insufficiency.
- Patient not willing to participate in the study.

RESULTS

Table-01: Distribution of Type of Infertility

Type of infertility	No. of patient
Primary infertility	28
Secondary infertility	2

The primary infertile couples who participated in the study were 28 in number. The secondary infertile couples who participated in the study were 2 in number. The two secondary infertile couples had one child each.

Table-02: Age Distribution of Female Patients

Age group Female	No. Of patient	Age group Male	No. of patient
20-24	11	20-24	01
25-29	15	25-29	18
30-34	03	30-34	07
35-40	01	35-40	04

The female patients participated in the study were from age of 21 years to 36 years. Maximum number of patients was in the age group of 25-29 years of age. The average age of female patients who participated in the study was 26.2 years. The average age of the patients was 26.2 years with average age of male partner was 29.5 years.

Table-03: Duration of unprotected sexual intercourse

Duration of unprotected sexual intercourse in years	Number Of Couple
1	1
2-3	10
4-5	13
6-7	4
>7	2

There were 28 couples with primary infertility and 2 couples suffered from secondary infertility. The couples with secondary infertility had one living child each. The average period of unprotected sexual intercourse was 4.2 years amongst the infertile couples.

On hysterosalpingographic study the number of patients with unilateral cornual block were 24 and bilateral block was present in 6 patients with 2 patients having bilateral cornual block and 4 patients with one side cornual and contralateral side fimbrial block in fallopian tubes. Right sided cornual block was present in 17 patients and left side cornual block in 15 patients making right sided cornual block slightly more common then left sided cornual block.

We observed the therapeutic effect of hysterosalphingographic study by documenting a patient with successfully relieved right sided cornual block after hyterosalpingography. We were successful in relieving 12 right sided and 8 left sided unilateral cornual block and the pregnancy was confirmed in 5 patients with right sided and 3 patients with left sided unilateral cornual block. In patients with bilateral fallopian tube obstruction we were successful in relieving 2 patients' right cornual block and 5 patients' left cornual block, while 1 patient with relieved right cornual block became pregnant and 1 patients of left cornual block successfully got pregnant. Another 1 patient with successfully relieved bilateral cornual block also got pregnant, so out of 30 patients we evaluated, 27 patients were successfully recanalized. The total number of pregnancy reported were in 11 patients with 36.67% success rate with average period of 3 months from fluoroscopic guided recanalisation of fallopian tube block. In a group of 30 patients there were total of 32 cornual block detected, we were successful in achieving a recanalization in 28 fallopian tube with 90.32% success rate of recanalization. The patients who didn't got pregnant in follow up period of an year since fluoroscopic guided recanalization of fallopian tube were tested for tubal patency by hysterosalpingographic study at the end of follow up period of one year and 4 patients were found to be having reblocked fallopian tube giving reblockade rate of 13.33% in one year follow up.

Table-04: Showing Side of Unilateral Cornual Obstruction

Unilateral obstruction	Right side	Left side
Cornual obstruction	14	10
Fimbrial obstruction	0	0
Total	14	10

Table-05: Showing Side and Type of Bilateral Obstruction

Bilateral obstruction	Right side	Left side
Cornual obstruction	3	5
Fimbrial obstruction	3	1
Total	6	6

DISCUSSION

Our study is based on the principle of fluoroscopic guided fallopian tube recanalization which has been proven worldwide to be effective and minimal invasive method for restoring fertility in patients with proximal fallopian tube obstruction.

The tubal factor is reported to account for 25–35% of subfertility in the western medical literature, proximal (uterotubal) obstruction reportedly occurs in 10–25% of women with tubal disease. However, population-based data from India are lacking [4].

In a series of 3424 infertile women who underwent hysterosalpingography, the incidences of unilateral and bilateral proximal tubal blockage were reported to be 15.2% and 12.2% respectively [5]. Proximal tubal obstruction may be due to muscular spasm, stromal edema, amorphous debris, mucosal agglutination and viscous secretions. Other factors include previous abortions/miscarriages cornual polyps, chronic salpingitis, endometriosis, salpingitis isthmicanodosa, intrauterine synechiae and parasite infection.

It is important to note that, whatever the pathology causing the condition; PTB is frequently an isolated finding with otherwise normal pelvic anatomy [6-8].

CONCLUSION

Fluoroscopic guided fallopian tube recanalization is simple outpatient based procedure which could be used to treat proximal fallopian tube block with high success rates and the complication rates are found to be very low as the procedure is non-surgical, minimally invasive and safe. The surgical and other invasive procedures can be used as second line procedure in management of proximal fallopian tube block when the fluoroscopic guided proximal fallopian tube recanalization technique is not suitable due to various technical limitations. Procedures other than fluoroscopic guided proximal fallopian tube recanalization technique are comparatively costly so by using fluoroscopic guided proximal fallopian tube recanalization technique as first line technique the financial burden on the patient for treatment of infertility due to proximal fallopian tube blockage can be minimised.

REFERENCES

1. Larsen U. Research on infertility: which definition should we use?. Fertility and sterility. 2005 Apr 1;83(4):846-52.
2. Boivin J, Bunting L, Collins JA, Nygren KG. International estimates of infertility prevalence and treatment-seeking: potential need and demand for infertility medical care. Human reproduction. 2007 Jun 1;22(6):1506-12.
3. Mascarenhas MN, Cheung H, Mathers CD, Stevens GA. Measuring infertility in populations: constructing a standard definition for use with demographic and reproductive health surveys. Population health metrics. 2012 Dec;10(1):17.
4. Osada H, Fujii TK, Tsunoda I, Tsubata K, Satoh K, Palter SF. Outpatient evaluation and treatment of tubal obstruction with selective salpingography and balloon tuboplasty. Fertility and sterility. 2000 May 1;73(5):1032-6.
5. Sulak PJ, Letterie GS, Coddington CC, Hayslip CC, Woodward JE, Klein TA. Histology of proximal tubal occlusion. Fertility and sterility. 1987 Sep 1;48(3):437-40.
6. Fortier KJ, Haney AF. The pathologic spectrum of uterotubal junction obstruction. Obstetrics and gynecology. 1985 Jan;65(1):93-8.
7. Green-Armytage VB. Tubo-uterine implantation. British Medical Journal. 1952 Jun 7;1(4770):1222.
8. Speroff L, Fritz MA, editors. Clinical gynecologic endocrinology and infertility. lippincott Williams & wilkins. 2005.