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PATTERN OF PATHOLOGIES ON HYSTEROSALPINGOGRAPHY IN INFERTILITY AT CMC LARKANA

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ABSTRACT

BACKGROUND/PURPOSE: *The aim of the research was to describe the pattern of tubal pathologies on HSG in patients with infertility.*
PATIENTS AND METHODS: *A prospective cross-sectional study, at Radiology department, at CMC Hospital larkana, within the period of 12 months, from April 2008 to March 2009. Hysterosalpingography was performed in the pre ovulatory phase of the menstrual cycle*
RESULTS: *The study population comprised 400 hundreds infertile women. 280 (70%) have bilateral normal tubes. Tubal blockage in 72 (18%) patients, bilateral in 28 patients, while unilateral tubal blockage in 44 (11%) patients. Fibroids were observed in 16(4%) cases. Hydrosalpinx noted in 14(3.5%). Loculated spillage of contrast in 12(3%) infertile cases. Findings of adenomyosis were seen in 2(0.5%) patients, while congenital abnormalities in 4(1%) infertile patients.*
CONCLUSION: *Hystersalpingography is more accurate in the diagnosis of tubal occlusion. The performance of HSG in the diagnosis of general tubal pathology and peritubal adhesion is poor.*

KEY WORDS: Infertility, Hysterosalpingography, tubal pathology.

INTRODUCTION:
Infertility is a global health issue affecting approximately 8 to 10% of couple's world wide [(1)]. Its prevalence is varying in South Asia, 4% in Bangladesh & Srilanka, 5% in Pakistan and 6% in Nepal. Similar rate has been reported by world fertility survey [(2)]. Hysterosalpingography is widely used as a first line approach to assess the patency of the Fallopian tubes and uterine anomalies in the routine fertility workup [(3)]. Hysterosalpingography is a quick out patient procedure, HSG is incomparable and often painful to the patient [(4)]. Hysterosalpingography is considered to have high sensitivity (60 – 98%) but a low specificity (15 – 80%) [(5)]. The lack of accuracy could be influenced by the faulty technique. Accuracy could be improved by optimizing the technique for performing the procedure by training the personel. On the other hand diagnostic accuracy of Hysterosalpingography can also influenced due to variability among observer [(6)]. It does involve the exposure to Ionizing radiation and Iodized contrast material. It plays an important role in the evalution of abnormalities related to the uterus and Fallopian tubes, including congenital anomalies, Polyps, Leiomyomas, Surgical changes, synechiae, adenomyosis, tubal occlusion, hydrosalpinx and peritubal adhesions etc. The incidence of febrile morbidity after Hysterosalpingography has been estimated in up to 4% of subfertile patients and even in 10% patents with tubal pathology [(7)]. Apart for infertility, other indications include post-operative evaluation of woman who have undergone tubal ligation or reversal of tubal ligation.
The aim of this study was to evaluate the diagnostic accuracy of Hysterosalpingography in the diagnosis of tubal pathology among infertile patients and to discus its clinical implication.

METHODS AND PATIENTS
Study Design: - Prospective cross-sectional study.
Place and Duration: - One year Study, At Radiology department Chandka Medical College Hospital Larkana, from April 2008 to March 2009.
Four hundred patients who were referred from different clinics to Radiology Dept: C.M.C.H Larkana, were included in the study.

All patients initially underwent routine evaluation that included a complete history and Physical Examination, Semen Analysis and Hormonal assessment.

Inclusion Criteria:-
I— Infertility diagnosis according WHO definition.
II— Women's ages 19 – 42 Years
III— confirmed ovulatory cycles and or normal ovarian reserve.

Exclusion Criteria:-
I— Women <19 years or > 42 Years
II— diminished ovarian reserve.
III— Any Sperm pathology.
IV— H /O Prior pelvic Surgery or Pelvic inflammatory disease.
V- Contraindications for HSG

Hysterosalpingography was performed in the preovulatory phase (During 7^{th} – 12^{th} day of menstrual cycle) as an out patient procedure without anesthesia. The informed consents of all the patients were obtained. A detailed Performa for each patient was filled up prior to procedure. A Water soluble contrast medium was used. Radiographs were taken at the instant when the uterine cavity and tubes were filled with opaque material and when an over flow was seen at both sides of the tubes and when maximal filing of the tubes was observed with out any over flow. After 30 minutes, a late Radiograph was made to detect contrast deposits. Hysterosalpingography was considered normal when both tubes were well out lined with free intraperitoneal spillage. Hysterosalpingography was considered abnormal when the evidence of either unilateral or bilateral tubal obstruction and or Peritubal adhesions were estimated. Additional abnormalities of the uterine cavity were recorded as well.

RESULTS

A total 400 hundred cases with unexplained infertility were included within the study period. All examinations were technically successful. Except mild pain and Per-vaginal bleeding in a minority of patients, no post procedure complication noted. Out of 400 infertile cases, 280 (70%) have bilateral normal tubes characterized by normal sized tubes with free intraperitoneal spillage. While different pathologies encountered in 120 (30%) patients.

Their ages ranged between 19 to 39 years, with a mean of 29.8 years. Primary infertility was 30% where as secondary infertility was 70%. The average infertility duration of patients with primary infertility was 2.6 years. The average duration of patients with secondary infertility was 4.3 years.

Table 1.

Unexplained Infectility cases No. 400

Normal Examination	→	280 (70%)
Abnormal Examination	→	120 (30%)
Tubal Blockage	→	72 (18%)
Fibroids	→	16 (4%)
Hydrosalpinx	→	14 (3.5%)
Locculated spill	→	12 (3%)
Adenomyosis	→	02 (0.5)
Congenital abnormalities	→	04 (1%)

Most commonly observed pathology was tubal blockage in 72 (18%) patients, bilateral tubal blockage was observed in 28 patients (7%). Unilateral tubal blockage occurring in 44 (11%) patients. Second pathology was uterine fibroids, observed in 16 (4%) infertile cases.

Hydrosalpinx noted in 14 patients (3.5%), unilateral in 10 (2.5%) patients and bilateral in 04 (1%) patients. Loculated spillage of contrast noted in 12 patients (3%).

Findings of Adenomyosis were seen in 02 patients (0.5%). While congenital abnormalities were noted in 04 (1%) infertile patients (see table No. 1).

DISCUSSION

Infertility is a major public health problem, seen as a major personal tragedy and can result in marital instability and suicidal tendencies [8]. Hysterosalpingography is a frequently utilized diagnostic method in assessment of tubal status and detection of intrauterine anatomical defects in the infertility diagnostic workup. Hysterosalpingography is a reliable procedure, quick and easy to perform, safe and cost affective in comparison with other modalities. Hysterosalpingography is contraindicated during menstruation, pregnancy, also in pelvic sepsis, a recent D&C, uterine malignancy i-e endometrial carcinoma and sensitivity to contrast media [9]. Hysterosalpingography has both therapeutic and diagnostic value. Following Hysterosalpingography, certain minor adhesions and partial tubal occlusion are lysed. An increase in pregnancy rate has been observed in the months after Hysterosalpingography with out any other gynaecological intervention [10]. The most commonly observed pathology in our study is tubal blockage. Tubal obstruction is difficult to differentiate from cornual spasm and those due to technical reasons, such as underfilling [5]. Cornual spasm is characterized by rounded smooth corneal margins where as cornual occlusion was characterized by pointed or irregular corneal margin [11], these features are difficult to evaluate objectively. A newly described radiological technique; selective ostial salpingography can be used to differentiate true mechanical obstruction from spasm with out subjecting the patient to laparoscopy [12, 13]. In our study high incidence of tubal blockage in infertility may be reflection of the high prevalence rate of pelvic inflammatory diseases and specially tuberculoses in our part. Uterine fibroid is second most common abnormality noted in our study. Uterine cavity abnormalities can be the cause of infertility in 10 – 15% of women. Abnormal uterine findings occur in approximately 50% of infertile women [14]. Previously, a study conducted; showed normal examination were noted in 60% cases, most commonly observed pathology was Hydrosalpinx [15]. Another study showed tubal blockage is most common abnormality among tubal pathologies [16]. Another study conducted preeti kanal *etal* to evaluate causes of infertility by diagnostic laparoscopy combined with Hysterosalpingography also found tubal blockage without adhesions as a most common cause of infertility [17]. Hydrosalpinx is defined as dilatation of the ampullary segment of the fallopian tube with associated thinning of the adherent fimbriae and destruction of the mucosa. Bilateral or unilateral Hydrosalpinx occurred in 14 (3.5%) patients. This value is lower than that of a similar study by Adetiloye, in that study Hydrosalpinx was noted in 44.5% of the patients [18]. The complications of Hysterosalpingography, which have been reported, included infection, urticaria, syncope, hemorrhage, shock, pulmonary and retinal embolus formation. [19, 20]. None of these complications occurred in this study, apart from mild procedural pain. Despite new innovations and recent advances in imaging modalities, hysterosalpingography remain important for visualizing the fallopian tubes [6]. A study conducted by Egle Tvarijonaviciene, for evaluating tubal

pathologies on Hysterosalpingography, used laparoscopy as reference standared, concluded that Hysterosalpingography is more accurate in diagnosing tubal occlusion, while for peritubal adhesion its accuracy is poor. Diagnostic laparoscopy provides a direct visual access to inner pelvic anatomy without major abdominal surgery so that ovaries, fallopian tubes and uterus can be studied in more detail. However data of some studies found the choice of laparoscopy as gold standared. Findings in a meta–analysis comparing results of HSG and laparoscopy for diagnosis of tubal pathology indicated that 35% of the tubes found to be occluded at laparoscopy showed patency at Hysterosalpingography [21].

CONCLUSION

Hysterosalpingography is a good clinical investigation modality in ruling in and ruling out the diagnosis of tubal occlusion when pathology is defined as two-sided tubal occlusion .Diagnostic accuracy of HSG is lacking in the diagnosis of general tubal pathology, peritubal adhesions, and tubal occlusion when target condition is defined as any form of tubal occlusion.

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