EVALUATION OF TUBAL PATENCY BY COLOR DOPPLER

PRATAP KUMAR ● SUNEETHA P

SUMMARY

Tubal patency was assessed in 80 cases of infertility by transvaginal color doppler (CD). The results were compared with hysterosalpingography (HSG), chromotubation (CT) and sonosalpingo-gram (SSG). As compared to H S G, the sensitivity was 75% and specificity was 100%. Colour doppler and HSG showed similar results in 96.3% of cases. When compared to CT, the sensitivity was 66.6% and specificity was 100%. CD & CT showed similar results in 92% of cases. When compared to SSG, the sensitivity was 90% and specificity was 100%. CD and SSG showed similar results in 97.5% of cases. Color doppler USG is a simple diagnostic procedure and can be used as a basic screening test for assessment of tubal patency.

INTRODUCTION

Tubal factors are involved in 25 - 30% of infertile couples. The most frequently used procedures to evaluate tubal patency currently are hysterosalpingoram (HSG) & chromotubation (CT). CT although permits direct evaluation involves drawbacks such as need for anaeshtesia and surgical intervention. In HSG, the risks are exposure to radiation and idiosyncrasy to X-ray contrast agents. Color doppler ultrasound (CD USG) does not require anaesthesia or carry the risks outlined above.

MATERIAL & METHODS

80 cases undergoing evaluation for infertility, at Kasturba Medical College,

Dept. of Obs & Gyn Kasturba Med. College Hosp. Manipal Karnataka.

Accepted for Publication on Nov' 96

Manipal, were chosen at random for this study, conducted between Feb 1994 and Sept 1995. CD USG was performed on all cases to assess tubal patency . The patients were divided into 3 groups. The results of group I were then compared with HSG, group II with CT and group III with SSG. 55 of the 80 women underwent HSG, 25 underwent CT and all 80 underwent SSG.

OBSERVATION AND ANALYSIS

Group I (n=55) color doppler (V/S) HSG. In 96.3% of cases both procedures showed similar results. In 3.7% of cases, the results obtained were contradictory (Table I). The sensitivity was 75% and specificity was 100%. CD-USG could not detect 2 cases of unilateral block.

In group II (n=25) color doppler was compared to chromotubation. In 92% of cases both procedures showed similar results. In 8% of cases the results obtained were contradictory as shown in Table II. The sensitivity was 66.6% and specificity was 100%. Colour doppler could not detect one case of unilateral block and one case of bilateral fimbrial block which simulated spill on both sides.

In Group III (n=80) color doppler was compared to sonosalpingogram. In 97.5% of cases, both procedures showed similar results and in 2.5% of cases, results obtained were contradictory as shown

Table I
SHOWING COLOR DOPPLER V/S HSG

Procedure	Colour Doppler	HSG
Bilateral patency	49 (89&)	47 (85.4%)
Bilateral block	1 (1.8%)	1 (1.8%)
Unilateral block	5 (9.1%)	7 (12.7%)

Table II
SHOWING COLOR DOPPLER V/S CHROMOTUBATION

Procedure	CD	CT
Bilateral patency	21 (84%)	19 (76%)
Bilateral block	1 (4%)	2 (8%)
Unilateral block	3 (12%)	4 (16%)

Table III
SHOWING COLOR DOPPLER V/S SONOSALPINGOGRAM

Procedure	CD	SSG
Bilateral patency	70 (87.5%)	71 (88.75%)
Bilateral block	2 (2.5%)	3 (3.75%)
Unilateral block	8 (10%)	6 (7.5%)

in Table III. As compared to SSG, the sensitivity was 90% and specificity 100%. Colour doppler showed one bilateral block as a unilateral block and SSG failed to detect one unilateral block which could be made out by colour doppler USG.

DISCUSSION

Colour doppler USG is a new diagnostic procedure that can be used as a screening test for tubal patency. It can be critisized on the grounds that (a) site of tubal block cannot be visualized (b) tubal architecture cannot be made out and (c) peritubal adhesions and mobility of the tube cannot be properly assessed. In our study in group I patients, it was found that CD USG and HSG showed consistent results in 96.3% of cases. CD failed to detect 2 cases of unilateral block. According to Peters & Caulam (1991) the correlation between both procedures was 81%. The sensitivity and specificity were 65% and 82% respectively. In a study conducted by Diechert et al (1992) the results obtained showed a complete agreement in 65% of cases. When compared to these 2 studies our study showed a higher percentage of correlation between CD USG and HSG. In group II patients CD USG and CT showed consistent results in 92% of cases. CD could not detect one case with bilateral fimbrial block which simulated spill on both sides and one case of unilateral block. According to Stern et al (1992) the correlation was 82%. In a study by Peters and Caulam (1991) consistent results were seen in 86% of cases.

In Group III patients CD USG and Gray scale SSG showed consistent results in 97.5% of cases. Diechert et al (1992) conducted a study on 17 patients and showed that both procedures showed similar results in 12 patients.

CONCLUSION

Transvaginal colour doppler SSG performed with isotonic saline is a simple screening procedure. It is cost effective, without exposure to radiation or anaesthesia and is non-invasive. It can be used as a basic screening test for tubal evaluation. Its efficacy in assessing the

tubal status has been comparable with other procedures like HSG and CT. Hence it can be recommended, not as a substitute to other procedures but as a screening test in evaluation of tubal status.

REFERENCES

1. *Diechert U., Schlief R, Van-De-Sandt H, Daume E : Fertil Steril. 57 : 62, 1992.*
2. *Peters AJ, Caulam CB : J. Obstet. & Gynec. : 164; 1530, 1991.*
3. *Stern J, Peters AJ, Coulam CB : Fertil Steril. 58 : 897, 1992.*