

A COMPARISON BETWEEN HYSTEOSALPINGOGRAPHY AND CULDOSCOPY IN ASSESSING THE TUBAL FACTOR IN INFERTILITY

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Tubal pathology is partly or solely responsible for 20%-30% of infertility (Speroff and Glass 1973; Taylor 1969). The invaluable aid of hysterosalpingography in evaluating the tubal status is well recognised (Seigler 1967). Hysterosalpingography (HSG) is more useful than insufflation in that it indicates the site of any tubal obstruction and may incidentally have a therapeutic value (Mackery *et al* 1971). However, peritubal adhesions which hamper ovum pick up even in the presence of anatomically patent tubes may be missed on HSG. Endoscopy on the other hand can be effectively used to detect such adhesions. In one series (Peterson and Behrman 1975) 1 in 5 patents with unexplained infertility had adhesions which were signi-

ficant enough to interfere with the tubo-ovarian function. It may also be possible that couples with a known factor contributing to infertility as anovulation or male factor may still have flimsy tubal adhesions which will interfere with the success of therapy of the known cause of infertility. On the other hand, patients with abnormal findings at HSG may be normal on endoscopy (Maathius *et al* 1972; Gabos 1976). The present communications reports the comparative value of HSG and endoscopy for investigating the tubal factor in cases of infertility.

Material and Methods

Seventy-eight consecutive cases of primary or secondary infertility attending the infertility clinic at the Institute for Research in Reproduction Bombay underwent both HSG and culdoscopy for evaluation of their tubal status. HSG was performed during the proliferative phase of the cycle using a water soluble dye (Conray 280 or Urograffin 60%). After an initial injection of the dye under fluoroscopy an antero-posterior film was

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taken followed by another five minutes later. A HSG was considered normal when both tubes were well outlined by a free flow of the dye through them into the pelvic cavity without any coiling of the tubes or localization of the dye. Culdoscopy was performed in the next cycle premenstrually under local anaesthesia. One per cent methylene blue solution was injected through a Colwin's cannula placed in the cervix to check the tubal patency. In addition the uterus, ovaries and tubes were observed. Intra-vasation of the dye and pelvic adhesions were looked for. Patients were observed for four hours and then discharged. The procedure failed in 2 cases and there were no complications in any of our patients.

Results

The Histogram depicts the observations at HSG and culdoscopy respectively. The Table gives the comparison between the

adhesions. In 6 of these patients there was a previous history of surgery (ovarian wedge resection in 2 patients, ventral-suspension in 2 and dilatation and curettage in the remaining 2). Infertility was unexplained in 3 cases and the remaining 2 had associated anovulation. Totally there were 17 cases who had tubal block

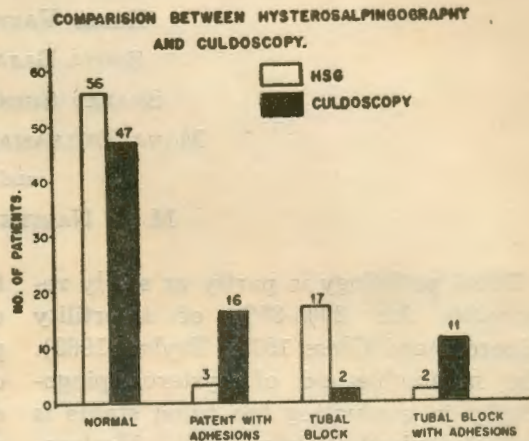


Fig. 1

TABLE
Comparison of Observation at HSG and Culdoscopy

HYSTEROSALPINGO- GRAPHY N = No. of cases	CULDOSCOPY				
	Normal	Blocked tubes without adhesions	Blocked tubes with adhesions	Patent tubes with adhesions	Failed
Normal (n = 56)	44	0	0	11	1
Blocked tubes (n = 17)	3	2	10	2	0
B + adhesions (n = 2)	0	0	1	0	1
Patent with adhesion (n = 3)	0	0	0	3	0
Final total at Culdoscopy	47	2	11	16	2

observations at the two procedures. While there were 56 cases with normal findings at HSG, culdoscopy revealed normal findings in only 44 of them. Culdoscopy failed in 1 and in the remaining 11 (14.1%) cases, there were peritubal, tubo-ovarian or tubo-omental

on HSG. Culdoscopy on these revealed normal tubes in 3 patients, confirmed the findings in 2, revealed additional findings in 10 cases and different findings like patent tubes with peritubal adhesions in 2.

Results of both HSG and culdoscopy

were in accord in 50 cases (64.1%). False negative findings demonstrated by HSG consisted of 4 cases (5.12%) which subsequent culdoscopy did not confirm.

Genital tuberculosis was diagnosed on culdoscopy in 6 cases (7.6%). HSG in these cases had revealed a cornual block in 4 cases, while in the remaining 2 the block was at the fimbrial end with rigid tubes. In only 2 of these patients there was a past history of extra-genital tuberculosis in the remaining 4 cases the disease had been silent.

Discussion

Both HSG and culdoscopy have been utilized for the evaluation of the tubal status in infertility. Although HSG is essential for the detection of intraluminal abnormalities of the cervix, uterus and fallopian tubes, chromopertubation at culdoscopy is of great value. The lifting up of the fimbrial end as the methylene blue spills through it can be observed very well through the culdoscope and signifies its normal functional capacity. Besides at culdoscopy many additional and/or different findings have been observed. In our experience results of both HSG and culdoscopy were in accord in 50 cases (64.1%). A similar positive correlation has been the experience of other investigators (Swolin and Rosenerantz 1969).

Culdoscopy revealed tubal adhesions in 11 cases in whom HSG was reported normal. It may be noted that 6 of these patients had a history of previous surgery e.g. suspension and ovarian wedge resection. It is now known that operations like the above may lead to pelvic adhesions and should be avoided. Flimsy tubal adhesions hamper the ovum-pick up mechanism and hence these should be ruled out in cases of unexplained infertility. Again in the presence of tubal

adhesions treatment of an obvious cause of infertility e.g. a male factor or an-ovulation would continue to be unfruitful.

In 11 cases of tubal block on HSG, culdoscopy revealed additional pathology and in totally 6 cases of genital tuberculosis was detected. In 4 of these the disease was silent and only presented its infertility. Genital tuberculosis is known to be an important cause of infertility in India. The incidence of tuberculosis as a cause of infertility in India varies from 6% (Malkani and Rajani 1953; Mukerjee *et al* 1967) to 14% (Gupta 1957). Motashaw *et al* (1974) described an important sign for the diagnosis of silent tuberculosis, "the blue uterus" which was elicited when chromopertubation with 1% methylene blue was carried out at the time of endoscopy. Methylene blue permeated the venous, lymphatic and interstitial spaces of the myometrium giving the uterus a blue colour. Such observations are of great value to the gynaecologist so that patients with genital tuberculosis should not be subjected to tubal surgery. Thus endoscopy is essential in order to assess the tubal status accurately and to select or reject a case for tubal plastic procedure. The results of tuboplasty can be effectively increased by proper selection of patients making pre-operative endoscopy mandatory. The detection of genital tuberculosis on culdoscopy is significant, with its diagnosis and treatment, a final prognosis can be given to the patient.

Conclusion

With all the above considerations we like to conclude that endoscopy is a must in (1) Cases whose HSG is abnormal before taking the patient for tuboplasty. (2) Women with a long standing infertility. (3) Women above the age of 30 even

