

# A COMPARISON OF HYSTEOSALPINGOGRAPHY AND LAPAROSCOPY IN THE INVESTIGATION OF INFERTILITY

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## INTRODUCTION

Pathologic changes involving the Fallopian tubes and peritoneum account for 50% of cases of female sterility. The performance of hysterosalpingography (HSG) <sup>(1)</sup> and laparoscopy <sup>(2, 3, 4, 5, 6, 7)</sup> is mandatory to establish this etiologic relationship.

Several Authors have demonstrated discrepancies between the results obtained by these two diagnostic procedures. The discrepancies range from 41% <sup>(8)</sup> to 54% <sup>(9)</sup> of the cases studied and are above all due to peritubal adhesion <sup>(10)</sup>; other important causes are phimosis of the terminal portion of the tube or slight hydrosalpinx <sup>(11)</sup>.

The goal of our research was to demonstrate the diagnostic usefulness of HSG coupled with chromopertubation (CP) in order to more accurately program those diagnostic procedures concerning tubal sterility.

## MATERIAL AND METHODS

We evaluated 85 sterile patients from 1974-1980, first with HSG then with CP. HSG was performed during the early post-menstrual period by means of the Riazzi Palmer uterine injector. We used iodamine as radiopaque substance. Laparoscopy was always performed by the same physician. Obviously, the patient was kept under complete anesthesia.

Furthermore, the endometrium was in the secretive phase; thus we could clearly distinguish the corpus luteum while an endometrial biopsy was made. We carried out CP by means of the cannula's Semm and 0.5 methylene blue solution. The results of HSG and CP are compared in table 1. We considered all cases of pelvic adhesions involving the Fallopian tubes viewed at laparoscopy; the diagnosis of tubal sterility was made even if there was no tubal obstruction observed by HSG.

## RESULTS

Results by laparoscopy and HSG were in agreement in 69% of the cases (tab. 2).

*False positive HSG.* In six patients, laparoscopy showed normal pelvic organs while HSG, in four patients of this group,

## SUMMARY

From 1974-1980, 85 patients were investigated with both hysterosalpingography (HSG) and laparoscopy.

Discordant diagnosis of adhesions made the largest group of disagreements. The causes of such and other discrepancies are discussed.

The Authors conclude that laparoscopy is necessary to establish a conclusive assessment of the tubal factor and must be performed before HSG.

The radiologic investigation still has its place to demonstrate lesions of endosalpinx before microsurgery.

Table 1. — Comparison of diagnoses obtained by HSG and laparoscopy.

Tubal report at HSG	Tubal report at laparoscopy					Adhesions
	Normal	Unilateral isthmic obstruction	Unilateral terminal obstruction	Bilateral isthmic obstruction	Bilateral terminal obstruction	
Normal	36		2		2	10
Unilateral isthmic obstruction	2	5			1	
Unilateral terminal obstruction			5		2	1
Bilateral isthmic obstruction	2			1		
Bilateral terminal obstruction	1		2		9	
Adhesions	1				1	2

| | Agreeing report.

indicated unilateral or bilateral isthmic obstruction, one with an apparent distal obstruction another with apparent pelvic adhesions.

*False negative HSG.* Laparoscopy showed pathologic changes of the Fallopian tubes in 14 patients; in the same group HSG revealed no pathologic alterations. Pelvic adhesions were found in 71% of the group. In 8% of the cases the disagreements related to the side or to the bilateral nature of the obstruction.

## DISCUSSION

Some factors can influence both laparoscopy and HSG:

– the viscosity of the radiopaque substance used in HSG, which differs from methylene blue solution used in CP, conditions the speed of flow into the tubes and a possible spastic reaction;

– the complete anesthesia during laparoscopy avoids the spastic reaction of the cornual portion which can induce an incorrect diagnosis of bilateral intramural obstruction;

– the phase of the menstrual cycle is important. Hutchins performed laparoscopy and HSG in complete anesthesia and in the post-ovulatory phase; the results between the two diagnostic procedures disagreed in only 22% of the cases;

– the period between the two investigations is important if evolutive pathology occurs (active phlogosis, nodular isthmic salpingitis).

In these cases real changes in the relationships can occur.

Laparoscopy is necessary to show the peritubal and ovarian adhesions ignored by HSG.

Radiologic investigation still has a role in demonstrating lesions of the endosalpinx before microsurgery.

Our data suggest that laparoscopy is necessary in detecting sterility; besides, it has to be performed before HSG.

Laparoscopy, in fact, can show the tubal opening and avoids either useless pelvic irradiation or complication in the presence of chronic phlogistic pathology.

Table 2.

	No. of cases	% of cases
Agreeing report at laparoscopy and HSG	58	69%
Disagreement report at laparoscopy and HSG	27	31%
False positive HSG	6	7%
False negative HSG	14	16%
Pathologic report at laparoscopy and HSG the disagreement related to the side	7	8%

In these cases radiological investigation will be made after medical care. The recent introduction of microhysteroscopy allows the exploration of the isthmian and intramural portion and reduces the need for x-ray investigation.

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