

GYNAECOLOGY SHORT COMMUNICATION

Assessment of tubal factor contribution to female infertility in a low resource setting (southwest Nigeria): Hysterosalpingography vs laparoscopy

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Introduction

Female factor contribution to infertility in Africa is commonly due to tubal disease (Otubu 1995). The incidence of bilateral tubal occlusion among infertile African patients is about three times higher than in the developed countries (Cates et al. 1985). This is largely due to a high prevalence of pelvic inflammatory disease in Africa (Giwa-Osagie et al. 1984). Tubal patency can be investigated using hysterosalpingography, laparoscopy and dye test, and more recently, hysterosalpingo-contrast sonography. However, laparoscopy is largely thought to be the gold standard for tubal assessment (Rohna et al. 2001). Hysterosalpingography, or hysteroscopy, has a complimentary role to laparoscopy in excluding endometrial pathology in the evaluation of infertile patients (Ohlgisser et al. 1985).

The concept of evidence-based medicine has necessitated the need for the repeated objective assessment of the management options for all medical conditions including infertility (Cooke 1999). Furthermore, the majority of patients in Africa are poor and can hardly afford the basic healthcare services (Sagay et al. 1998). The cost of daycare laparoscopy at Ibadan is presently about 7,500 Naira (about £50) compared with hysterosalpingography at 4,500 Naira (about £30).

In view of the above, this study examines the cost-effectiveness of laparoscopy as compared with hysterosalpingography in the management of infertile couples in our clinic.

Patients and methods

A total of 405 infertile women, who had a diagnostic laparoscopy and dye test between 1 January 1996 and 31 December 2002, in the Department of Obstetrics and Gynaecology, University College Hospital, Ibadan, were identified using the register for laparoscopy. The records were complete and consistent for 387 patients and these

formed the subjects of this study. All the patients had diagnostic laparoscopy and dye test under conscious sedation and local anaesthesia. All the laparoscopies were performed between the 21st and 25th day of the menstrual cycle.

The individual case notes were carefully studied and information obtained about the patient's age, parity, duration of infertility, pre-operative investigation, interval between the first gynaecological consultation and time of hysterosalpingography and laparoscopy findings and complications. Data obtained were analysed using EPIINFO 2000 software.

Results

The mean age of the study group was 30 ± 5.2 years. Secondary infertility accounted for 68.6% of the population studied. The mean duration of infertility was 7.9 years with a SD of 3.6 years. The results of pre-operative investigations on couples in this study (Figure 1) revealed that 60% of the male partners had a seminal fluid analysis, and the results showed abnormality in 29.6% of cases, which was mainly oligospermia (80.6%). The hormonal assay results of four patients that complained of amenorrhoea were normal. About 90% of the patients had hysterosalpingography done before laparoscopy. The mean interval between first consultation and hysterosalpingography was 8.4 ± 4.6 weeks. Out of the 348 patients that had hysterosalpingography, 37.4% had bilateral patent tubes, 19.0% had unilateral tubal blockage, 43.6% of the patients had bilateral tubal blockage, 9.8% had evidence of pelvic adhesion and about 2.0% had intrauterine synechia (Table I).

All the patients (387) in this study had a successful diagnostic laparoscopy, dye test and endometrial biopsy. The findings revealed that 30.7% of these patients had bilateral patent tubes, 21.0% had unilateral tubal occlusion, 48.3% had bilateral tubal occlusion, 10.1% had pelvic adhesion and other associated abnormalities were seen

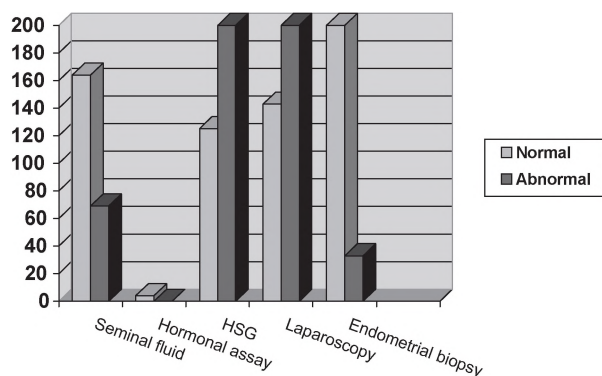


Figure 1. Investigation of infertile couple.

Table I. The outcomes of hysterosalpingography, laparoscopy and dye test

Variables	Frequency	(%)
Hysterosalpingography (<i>n</i> 348)		
Bilateral patent tubes	130	37.4
Unilateral tubal occlusion	66	19.0
Bilateral tubal occlusion	152	43.6
Pelvic adhesions*	34	9.8
Intrauterine synechia*	7	2.0
Laparoscopy and dye test (<i>n</i> 387)		
Bilateral patent tube	119	30.7
Unilateral tubal occlusion	81	21.0
Bilateral tubal occlusion	187	48.3
Pelvic adhesion*	39	10.1
Endometriosis*	12	12
Ovarian cysts*	58	15.0

*Associated findings from the tubal assessment by the two techniques.

(15.0% had ovarian cyst and 3.1% had endometriosis) (Table I).

Discussion

Tube-peritoneal factor still remains the most common cause of infertility in Africa (Otubu 1995). The relatively low proportion of patients' partners who had seminal fluid analysis reflects the general reluctance of men to have seminal fluid analysis done in our environment, however the outcome among those that consented to the test is comparable with findings elsewhere (Hornstein and Schust 1996).

Hormonal assay as a test of ovulation is rarely done in our centre because ovulatory disorders are not very common and there is a high cost for the investigation (Cates et al. 1985). The result of endometrial sampling obtained at mid-luteal phase laparoscopy further confirmed that anovulation is not very common.

The outcome of tubal findings in this study by both hysterosalpingography and laparoscopy on the same patients were comparable (Vasiljevic 1996). As in other studies (Opsahl et al. 1993), hysterosalpingography is highly predictive of normal tubes as shown in this study. However, laparoscopic assessments were more sensitive than hysterosalpingography results in all the grades of tubal abnormalities considered in this study. Other benefits of laparoscopy such as its role in diagnosing other pelvic pathology are also demonstrated in our study.

Conclusion

The outcome of this study shows that findings on hysterosalpingogram may be reliably sufficient in evaluating tubal pathology as a cause of infertility, especially in settings where laparoscopy is not readily available or when the couple can only afford a single test. Therefore, we recommend that mandatory laparoscopy in all cases of suspected tubal factors in a low resource setting should be discouraged and that such specialised investigations should be reserved for selected cases. This approach we believe will help to give the majority of infertile couples in Africa, who can hardly afford such services, the opportunity to be effectively and judiciously evaluated for this socially distressing medical condition.

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