HYSTEROSALPINGOGRAPHY IN ITROGENIC UTERINE FISTULA.

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ABSTRACT
Hysterosalpingography (HSG) was performed in four patients through fistulae which were created during termination of pregnancies. The previous HSG done prior to this study did not demonstrate the uterine cavity and the fallopian tubes in all the patients They showed only a contrast filled vaginal vault.

Fistulae were found in the fornices of the patients and these were the openings through which the contrast refluxed into the vagina preventing demonstration of the uterine cavity and fallopian tubes. These fistulae were cannulated after using the volselum forceps to clip the anterior and posterior lips of the cervix. The uterine cavities and fallopian tubes were demonstrated in all patients. The patients did not have a history of insertion of corrosive pastries into the vagina at any time. They admitted terminating pregnancies of between 7 and 14 weeks old in the last three years. Fistulae as a cause of failure of hysterosalpingographic procedures, as seen in the patients in this study, has not been previously documented.

INTRODUCTION

Hysterosalpingography (HSG) is a contrast investigation which helps to visualize cervical canal, uterine cavity and fallopian tubes. It can be used to diagnose fistulae, tubal occlusions, uterine abnormalities and other causes of recurrent abortion. HSG has been one of the standard investigations for evaluation of the anatomical appearances of the uterine cavity and fallopian tubes, until the laparoscopic examination was added as a complementary test.[1,2] Proper HSG can only be done when the cervical canal communicates with the uterine cavity. This is done ideally with a fluoroscopy x-ray machine where it is available. All the cases reported in this study were done blind because fluoroscopy was not available. Intra-peritoneal perforations from surgical gynaecological interventions in the uterine cavity may be complicated by peritonitis and the patient may end up with a laparotomy if conservative management fails.

A perforation of the uterus through the fornix communicates with the vagina and so does not result in peritonitis. This may go unnoticed, and the menstrual flow comes out through the opening, as is the case in these four patients. Fertility may be impaired in such patients, because of injuries sustained at the termination of pregnancy. The purpose of this presentation is to indicate that failed HSG and secondary infertility may be due to an unnoticed perforation of the uterus through the fornices following a termination of pregnancy.

Case 1:
A.O., a 28-year-old school teacher, was referred for HSG for secondary infertility. She had this test done twice eight months ago. In both cases the uterine cavity and the fallopian tubes were not demonstrated. The repeat HSG done for this study showed a pool of contrast in the fornices on test injection. The contrast did not reflux from the cervical canal. (see figure 1). Further examination of the vaginal vault and fornices revealed an opening at the 8 O' clock position in the fornix which admitted the uterine sound. Clamping the anterior and posterior lips of cervix together closed the cervical canal. The opening was cannulated and the uterine cavity and both fallopian tubes were demonstrated with peritoneal spill. There was also evidence of synechiae in the uterine

cavity (see Figure 2). On direct questioning the patient admitted terminating a 7-week-old pregnancy 2 years and 3 months previously. She was not aware of the opening in the fornix, and never had a speculum examination in the course of the investigation for her infertility.

Case 2:
D.G., a 26-year-old woman was referred for HSG because of secondary infertility. She had this test done elsewhere 6 months previously. The uterine cavity was not demonstrated; rather the vaginal vault was filled with contrast. A repeat HSG, for this study, showed contrast in the fornices which did not reflux from the tightly fitted cone in the cervical canal. Further examination of the vagina revealed an opening at the 8' O clock position in the fornix. A sound was passed through this opening into the uterine cavity. The cervical canal was closed and the opening cannulated. Contrast injection demonstrated the uterine cavity and the fallopian tubes. Synechiae were demonstrated at the right cornual end of the uterine cavity (see figure 3). The patient admitted terminating a 10-week-old pregnancy eighteen months previously. She was not aware of the opening in the fornix.

Case 3:

D. H. is a 22-year-old housewife that was referred for HSG for secondary infertility. The HSG that was done previously failed to demonstrate the uterine cavity and fallopian tubes. The repeat HSG revealed a fistula at the 8' O clock position. This opening communicateed with the uterine cavity. The patient admitted terminating a 10-week-old pregnancy when she was 20 years old. She is not aware of the fistula. The cervix was clamped and the fistula cannulated; the uterine cavity and the fallopian tubes were demonstrated with the contrast. (see figure 4.)

Case 4:
T. H., a 33-year-old banker, was referred for a repeat HSG. With the patient in litothomy position and the anterior lip of cervix clamped, the uterine sound was passed through the external os and it came out through the posterior wall of the cervix. Through this fistula at the 6' O clock position in the fornix the sound was advanced into the uterine cavity. This fistula was cannulated directly and the uterine cavity and the fallopian tubes were demonstrated with contrast.

DISCUSSION
The cases reported in this study had previous HSG done in other centres that did not demonstrate the uterine cavity and fallopian tubes. A repeat HSG resulted in large amounts of contrast in the fornices and the vaginal vault on test injection even when no reflux was seen from the cervical os when the test injection of contrast was done. This obviously meant that the contrast was coming out through another opening other than the cervical canal. Further re-assessment of the vagina and fornices revealed reddish openings at 8 O' clock position in three of the patients and at 6' O clock position in one patient. These openings were found to communicate with the uterine cavity when the uterine sound was passed through them. All the patients admitted having had a surgically induced abortion previously.

The essence of HSG is to demonstrate the uterine cavity, fallopian tubes and peritoneal spill through the naturally existing cervical canal. In all the patients in this study, this demonstration was not possible because of the existence of a false opening into the uterine cavity. The opening prevented a pressure build up that should ordinarily occur in the uterine cavity before the fallopian tubes are filled and contrast spills into the peritoneum. These openings were obviously created during the surgical gynaecological termination of the pregnancies. All the patients claimed that the procedures were performed by qualified doctors. None of the patients knew about the existence of these fistulae after the termination of the pregnancy.

Complications of criminal abortion have been

described as one of the causes of infertility due to salpingitis.[3] Uterine perforation is a complication of criminal abortion .[4] Termination of pregnancies through dilatation and curettage requires more cervical dilatation and consequently is associated with a significantly higher complication rates including uterine injuries.[5] Trauma to the uterus is commoner in women under the age of 17 and the risk of uterine perforation increases with increasing gestational age.[6] While dilating the cervix the instrument could be pushed through the substance of the cervix rather than through the canal. This may create a false passage. The instrument may be pushed through the fundus of uterus into the peritoneal cavity resulting in peritonitis. Uterine perforation through the right side of the cervical canal is common especially in right-handed people.[6] Three of the patients in this study had the perforation on the right side of the cervical canal.

Pelvic fistulae may result from obstetric complications, inflammatory bowel disease, pelvic surgery and pelvic radiotherapy.[8] None of the four patients in this study had any of these problems or procedures. Hysterosalpingographic procedures may fail due to severe vaginismus, cervical stenosis or reflux when the cervical canal is very wide.[7] Uterine fistula as a cause of failure of hysterosalpingographic procedures, as seen in the patients in this study, has not been previously documented in the literature.

CONCLUSION

Non-demonstration of uterine cavity in a properly conducted HSG which does not show reflux through cervical canal on test injection, calls for a thorough examination of fornices to exclude fistulae which not only cause failure of the procedure but may also be responsible for the infertility.

Fig. 1. Radiograph taken while injecting contrast through the cervical canal. The uterine cavity was not demonstrated rather the contrast was seen in the vaginal vault.

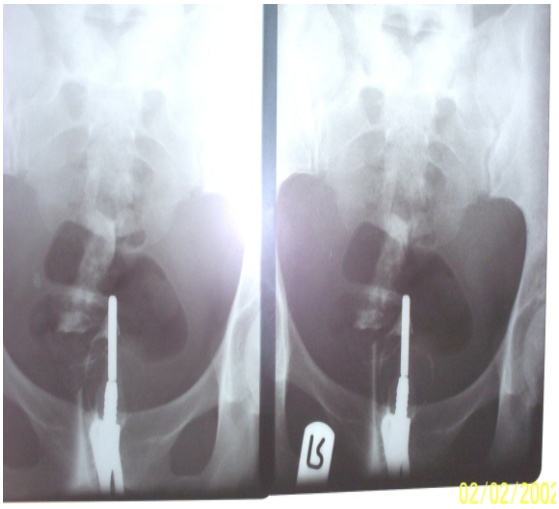


Fig. 2. The uterine cavity and both fallopian tubes were demonstrated with peritoneal spill. There was also evidence of synechiae in the uterine cavity.

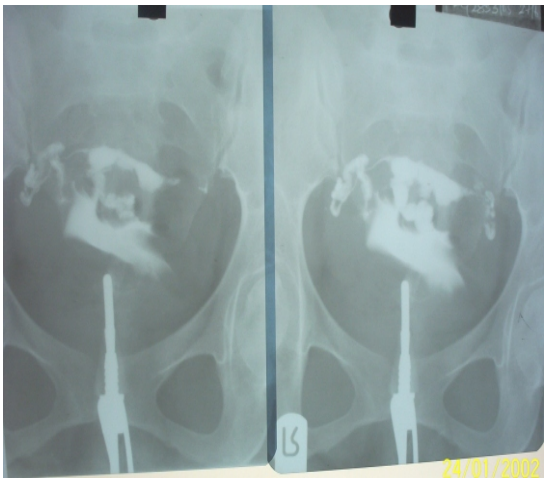


Fig. 3. The uterine cavity and the fallopian tubes were demonstrated with peritoneal spill. Synechiae were demonstrated at the right cornual end of the uterine cavity.

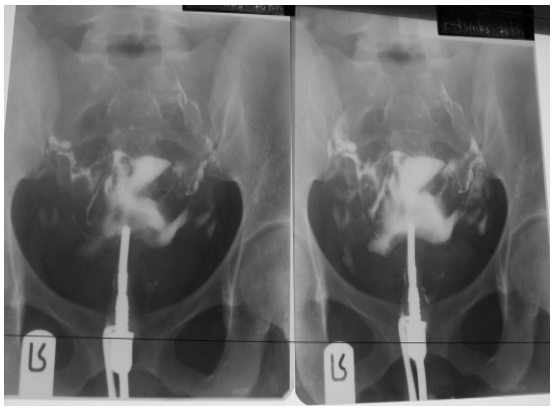
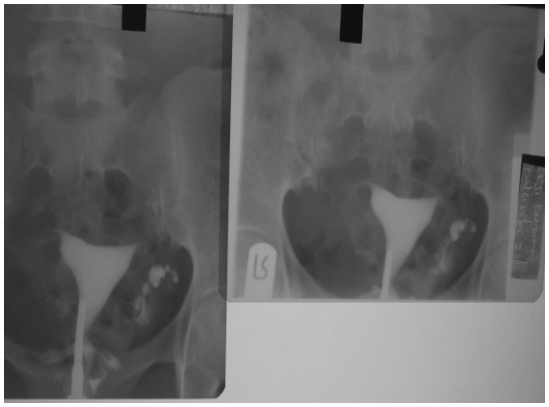


Fig. 4. The uterine cavity and the fallopian tubes were demonstrated.



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