1954

Salvix and its use in hysterosalpingography

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SALPIX

AND ITS USE IN HYSTEROSALPINGOGRAPHY

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Submitted in Partial Fulfillment for the Degree of
Doctor of Medicine

College of Medicine, University of Nebraska

March 24, 1954

Omaha, Nebraska

I would like to acknowlege the help received from the following, without which this thesis could not have been written.

Leon S. McGoogan, M.D. Chairman of the Department of Obstetrics and Gynecology.

Walter T. Cotton, M.D. My Faculty Advisor.

Philip H. Henderson Jr., M.D.

George M. Horner, M.D.

Ortho Research Foundation

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Salpix is a new radiopaque medium utilized for hysterosalpingography that has been developed by the Ortho Research Foundation. The history of hysterosalpingography, the materials used and their advantages and disadvantages are of interest.

Hysterosalpingography originated in 1912 by LeLourier(7), using colloidal silver. In 1914, Cary and Rubin(9), working independantly, attempted using a 10% collargol solution. However, the plates were not satisfactory, difficult to interpret and the injected medium caused considerable irritation of the fallopian tubes. In 1922, Duvergey and Dux(7), using 20% Silver Nitrate and in 1923, Kennedy and Schalen(7), using 20% Sodium Bromide reported severe reactions to tissue. Stone(7), in 1923, used a solution of 1/1000 hot bichloride and iodine. In England, Williams and Reynolds(7), employed emulsions of barium sulfate and bismuth. This type of medium was not absorbed and damage to the tubes resulted. The use of iodized oils was suggested in 1925 by Carlos Heuser(7), followed by Vercesi, Jaroschka, Rubin & Bendick(10), and Scheider & Eiser(3). Two X-ray films were taken at the time of injection and a third 24 hours later.

In 1927, Zimmerman and Nahmmacher, Odenthal, and Hoffman (7), discussed the dangers from the use of iodized oils. Histological

examinations of the tubes excised 24 hours after the procedure did not disclose intrinsic pathological alterations, but the peritoneum showed leukocytic infiltrations and strands of fibrin. Temperature reactions were observed occasionally, but subsided quickly. Albara(2), reported a case of calcification of the retained mass in a tube two months after the injection. Rubin(12), reported abscess formation in two cases and peritoneal irritation in three cases. It is now well known that sometimes many months may elapse before the radiopaque medium is completely absorbed. At times the interval may be as long as 15 months. Considerable material has been published describing the adverse reactions that are observed as the result of the use of iodized oils. They may be summarized as follows:

1. RETENTION IN OBSTRUCTED FALLOPIAN TUBES. If the tubes were not patent, no apparant damage is suffered by the patient. However, if the tubes have been partially patent, the iodized oil is trapped by the virtue of its viscosity, its very slow absorption, and its failure to mix with the tubal secretions. Retained for varying lengths of time within the constricted lumen, the oil may, and in some cases actually does, set up a foreign body reaction leading to granuloma formation and complete tubal obstruction. (11)

2. MULTIPLE CYST FORMATION. A second undesirable result of the intra-uterine injection of iodized oil is the long periods of time that spillage into the peritoneal cavity remains, setting up multiple cyst formations, which it is well to avoid even though such peritoneal reaction may not interfere with conception. (2, 11)

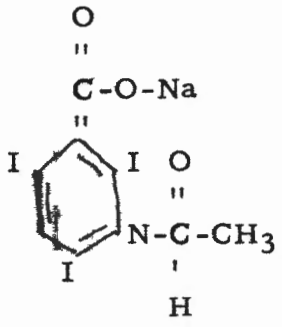
3. OIL EMBOLISM. Of less frequent occurence, but more serious when it occurs, is the intravasation of the iodized oil into the uterine veins and thence into the systemic circulation. Also to be considered, is the introduction of the oil into the myometrium-especially in cases of adenomyosis-where the iodized oil remains for a long time, with or without inciting inflammatory processes. (1, 3, 16)

These clinical and pathological observations have resulted in the attempt to develop a radiopaque substance that would have the following properties: (1) It should be dense enough to cast clean shadows; (2) It should pass through the fallopian tubes slowly enough to be filmed: (3) It should be sufficiently viscous so that strictures of the tubal lumen may be accurately visualized; (4) Finally the material injected should be resorbed within a few hours, leaving no trace behind in the tubes or in the peritoneal cavity, yet offering the possibility of making a complete and positive diagnosis in a relatively short time. Salpix is of interest because it meets all of the above criteria. It is also

totally innocuous to the reproductive system and the body. (13)

CHEMICAL AND PHYSICAL PROPERTIES

Salpix is a combination of a solution of polyvinylpyrrolidone (PVP), the basis of a well-known blood extender, to which has been added Sodium Acetrizoate. PVP has been selected as a suitable agent to impart to the Sodium Acetrizoate, a compound of high x-ray opacity, the needed viscosity and tissue adhesiveness. Sodium Acetrizoate has a high iodine content (65.8%) as may be seen from the following formula:



Chemically this compound is described as sodium 3-acetyl-amino-2-4-6-triiodobenzoate.

Salpix is an amber colored mixture. Its viscosity at 37 degrees centigrade is approximately 200 centipoise. It contains 54% Sodium Acetrizoate. It is stable on storage at 50 degrees centigrade for 6 months, and will permit autoclaving without loss of its desirable properties. It is subjected to the usual controls for sterility and

pyrogenicity. (17)

THE TOXICITY OF PVP AND SODIUM ACETRIZOATE

The non-toxicity of each component of Salpix has been amply demonstrated. Although it might have been ssumed that the combination of the two to be also non-toxic, this was not taken for granted. Special tests were therefore performed to establish the non-toxicity of thes new contrast medium. These tests consisted of injection into monkeys, rabbits, dogs, and rats by the following routes: intravenously, intraperitoneally by direct abdominal puncture and by way of the uterus, subcutaneously and by gavage. The tests are presented in outline as follows:

Summary of Experiments with Monkeys.

Thirty experiments were performed on 13 monkeys. Of these animals; two were used 4 times, two 3 times, four twice and eight once. In all the experiments, x-ray films were taken.

Three monkeys received each 5 cc. of Salpix intravenously; none showed any reaction. In 5 experiments, the uterus was entered and injected from below by the technique of Rubin and Morse(12). Six times the uterus was injected successfully from without, i. e. through the abdominal wall, becouse the approach from below is sometimes extremely difficult. On 3 occasions, a lapatotomy was performed and

the uterus injected. Nine intraperitoneal injections were performed to test toxicity and rate of absorption. In four animals, only the vagina was injected. In the 13 monkeys observed, there was no sign of irritation or toxicity. (17)

Absence of Toxicity in Dogs and Rabbits

A dog was injected subcutaneously with 5 cc. of Salpix. At autopsy the next day, no sign of irritation was discernable at the injected area. Another dog received subcutaneously 2 cc. of Salpix in each of the following regions: right and left scapula and right and left gluteal regions. No reaction was noted. A third dog licked the site of injection of 5 cc. of Salpix from time to time for about an hour, but otherwise showed no symptoms.

Four rabbits injected with 5 cc. of Salpix intravenously, showed no symptoms of discomfort or irritation whatever. A fifth rabbit was treated as follows: five cc. of Salpix was injected intravenously. Five minutes later, the right renal pelvis and ureter and the left renal pelvis ware visualized on x-ray film. The liver was mottled, the lobules being outlined radiographically. After 30 minutes, they were still visualized, and much of the material appeared in the bladder. At 50 minutes, both ureters were visualized. The bladder was seen to dilate and contained Salpix. In 80 minutes, another intravenous

injection of 2.5 cc. of Salpix was performed. The findings were the same as above. The rabbit tolerated the above procedures with no signs of an adverse reaction.(17)

Rate of Absorption of Salpix in Animal Injections.

Following intravenous injection of 5 cc. into rabbits; the material was visible only in the bladder one hour later.

Following intravenous injection into monkeys;

No. 29 - 1/18/52 - 5 cc. - In one hour Salpix visualized only in bladder.

No. 26 - 1/23/52 - Same in 75 minutes. (17)

Following intraperitoneal injection into monkeys (3-5 cc.)

No. 2 - 1/18/52 - 3 cc. - In one hour, body cavity free, all in bladder.

No. 11 - 1/28/52 - 5 cc. - Same as in No. 2.

No. 8 - 1/29/52 - 5 cc. - In one hour, faint streaks of Salpix appeared in the abdominal cavity, the bladder shadow showing large filling.

No. 30 - 2/5/52 - 3 cc. - In 80 minutes all in bladder. In 24 hours none was left in the bladder.

No. 8 - 2/5/52 - 3 cc. - In 30 minutes the abdomen was free, the bladder being filled with Salpix. In 23 hours, no Salpix was visible anywhere. (17)

Injection of the uteri of monkeys. (3 cc.)

No. 21 - 11/19/52 - After 90 minutes, there was a slight residue in

the uterus, most of the Salpix appearing in the bladder.

No. 8 - 1/28/52 - Uterus filled, spillage through the tubes into the body cavity. In one hour the abdominal cavity was clear, the uterine outline good and much Salpix in the bladder.

No. 20 - 2/5/52 - 3 cc. injected by mistake into the pelvis; then 2.3 cc. were injected into the uterus. In 24 hour, no Salpix exident.

No. 24 - 2/5/52 - 3 cc. injected into the uterus, with escape into the peritoneal cavity through the oviducts. In 2 hours all absorbed from the abdominal cavity. In 24 hours, All the Salpix had disappeared from the body.

No. 21 - 3/7/52 - Uterus injected. Escape into the peritoneal cavity. In 30 minutes, the uterine lumen was well outlined with no Salpix visible in the body cavity. (17)

Summary of Toxicity Experiments

The following is a summary of the observations derived from animal experiments with Salpix.

(1) After Salpix has been injected intravenously, it is rapidly excreted via the kidneys. Salpix remains in the uterine cavity from one to two hours after injection. Spillage into the peritoneal cavity is eliminated within one hour.

(2) The longer period of retention of Salpix in the monkey uterus

as compared with the human uterus is due to the presence of a colliculus in the monkey, pushing dorsally in the cervix, causing the cervix to become circuitous (Hartmann and Straus: Anatomy of the Rhesus Monkey). The colliculus acts as a ball valve. Therefore to enter the canal with a cannula requires a surgical operation.

(3) Salpix can safely be injected intravenously and therefore, its accidental entry into the blood stream during and after uterosalpingography is neither attended or followed by the harmful effects which may follow the intravasation of oil into the uterine veins causing an oil embolism. (17)

CLINICAL OBSERVATIONS AND EVALUATION

Rubin, Myller, and Hartman (13), in 1953, employed Salpix in uterotubal injection on more than 350 patients. Rubin(13), reports that the clinical use of Salpix in his experience, has been more satisfactory than that of previously available opaque substances. Practically none of his patients experienced the mild to severe abdominal pains which attend or follow injection of iodized oils and solutions of organic iodine compounds hitherto used, including Rayopaque. He states that when other iodated compounds were used, it was necessary to premedicate the patients because many complained of pelvic pains and other signs of peritoneal irritation lasting from a few minutes to a few hours.

Although no permanent sequelae were noted after other water-soluble contrast media, the immediate reaction after injection was still a disadvantage that needed to be overcome.

The reason for the absence of the subjective discomfort from Salpix seems to be the following. Schubert (4), has shown that PVP reduces the toxicity of various compounds. In the case of toxic dyes, it serves to direct them out of the blood plasma and tissues to the kidneys and diverting them from the liver , hence hastening their excretion. Thus it acts much like human albumin binding. Therefore the virtually complete nontoxicity of Salpix may be due to the protective action of PVP, as well as to its rapid absorption and excretion. This is rapid enough to reduce irritation and slow enough to enable the examining physician to make a conclusive diagnosis of intruterine lesions and of tubal patency or non-patency. Furthermore, Sodium Acetrizaate is stable and liberates no free iodine which might cause peritoneal irritation.

The major interest in Salpix is its usefulness in detecting intrauterine lesions such as polypi, submucous myomas and cervical strictures both before and after menopause as well as tubal patency in sterility problems. In addition, the presence of endometrial carcinoma is demonstrated by Salpix at least as well as by any of the iodized oils

hitherto extensively employed for hysterosalpingography without sharing their disadvantages. Rubin (13), states that although the importance of these conditions has been attested by innumerable reports in the literature, the value of routine hysterography as a preoperative diagnostic measure in myomectomy and even more importantly in the diagnosis of endometrial carcinoma has not been appreciated.

METHODS OF USE.

The technique that is recommended by the Ortho Company (17) is as follows:

I. Hysterosalpingography

Standard procedures, as described in gynecological literature, should be adhered to in the use of Salpix as the radiopaque medium.

(1) Warm the Salpix contrast medium to body temperature and pour directly into the barrel of the syringe that is to be used.

(2) Slowly inject 2-6 cc. (In our series, it was found that where there was uterine enlargement, 8-10 cc. of Salpix were often needed to get good filling of the uterine cavity and the tubes.) Excess spilling into the peritoneal cavity should be avoided or essential structures may be obscured.

(3) Inject the Salpix under fluroscopic control or take roentgenograms immediately after injection. (The procedure used in our series of cases was to take one film immediately after the injection and a second film 5 minutes later.)

Repeat roentgenograms in 24 hours are unnecessary and are usually of little value because of the rapid absorption of the Salpix contrast medium.

II. A Diagnostic Procedure as an Aid in the Detection of Uterine and Tubal Pathology (after Rubin, 13)

(1) Inject the Salpix contrast medium into the uterus in the usual manner.

(2) Immediately withdraw as much of the Salpix as is possible by the introduction of a cannula. Following removal of the medium, a fine film remains, coating the endometrial surface. This allows radiological visualization of any uterine pathology that may be present. In the presence of uterine malignancy, Salpix contrast medium is rapidly absorbed into the heterogenous area giving it a characteristic "moth eaten" or "cotton ball" effect.

CONTRAINDICATIONS TO THE USE OF SALPIX.

The contraindications to the use of Salpix are: (17)

(1) Presence of severe vaginal infections.

(2) Marked cervical erosion or endocervicitis.

(3) Existing or recent pelvic infection.

(4) During the immediate pre- or post-menstrual phase.

(5) Pregnancy.

(In the University Hospital Series, 6 patients had chronic cervicitis with erosion and one case had a chronic PID with bilateral chronic salpingitis with a small pyosalpinx. No reactions or sequelae were noted in these cases after hysterosalpingography.)

SENSITIVITY TEST

If it is indicated in the patient's history, and intracutaneous skin test or sublingual absorption observation may be performed with 0.1 cc. of Salpix contrast medium.

SERIES OF HYSTEROSALPINGOGRAMS PERFORMED WITH SALPIX AT THE UNIVERSITY OF NEBRASKA HOSPITAL.

A series of 22 hysterosalpingograms using Salpix was conducted at the University of Nebraska Hospital. In this series there were 6 cases of chronic cervicitis, 6 cases of menorrhagia, 7 cases of uterine fibroids, one endometrial polyp, 2 cases of PID, one bicornate uterus, one adenocarcinoma, one case of sarcoma uterus, one submucous fibroid and one partial prolapse. Four patients were bleeding vaginally at the time the procedures were performed. Four patients experienced

some cramping upon injection of the dye. In the entire series there were no adverse reactions to the Salpix except for one patient who developed a fever of 103 degrees F with dysuria immediately following the test. This patient was put on combiotic and was afebrile in 2 days. The quality of the films on a whole were excellent except in a few cases where it was found necessary to use 10 cc. of Salpix rather than the 6 cc. recommended to get good filling of the uterine cavity and the tubes. However in these cases the uteri were found to be enlarged upon pelvic examination and thus, you can predict when an additional amount of Salpix will be needed. The case summaries of our series are enclosed at the end of this thesis.

SUMMARY AND CONCLUSIONS.

Salpix, a new water soluble radiopaque medium, which combines Polyvinylpyrrolidone (PVP) and Sodium Acetrizoate, fully meets the criteria established by Rubin(11), in 1947 that an ideal contrast medium for use in hysterosalpingography must;

(1) Be totally innocuous to the reproductive tract and the body.

(2) Be totally reabsorbed and leave no residue after its diagnostic purpose has been accomplished.

(3) Have proper viscosity so that the uterus, tubes and any pathological findings may be adequately visualized.

Frequent pathological or morbid sequelae experienced with iodized oils are largely eliminated with Salpix contrast medium. This new contrast medium is also superior to the other water-soluble combinations of iodine with viscosity-increasing substances because its use is neither attended nor followed by pelvic irritation. Twenty-four hour post-injection films, common with iodized oils, are not necessary with Salpix because of its ability to pass through the finest tubal lumen.

Indications for the use of Salpix and Hysterosalpingography are:

(1) Determination of tubal pregnancy.

(2) Mechanical release of tubal obstruction.

(3) Diagnosis of malformation of the uterus or tubes.

(4) Post-operative visualization of tubal plastic surgery.

(5) A diagnostic procedure as an aid in the detection of uterine and tubal malignancy. (after Rubin, 13)

Technique for using Salpix:

(1) Warm the Salpix contrast medium to body temperature; pour directly into the barrel of the syringe to be used.

(2) Slowly inject 2-6 cc. Avoid excessive spilling into the peritoneal cavity or essential structures may be obscured.

(3) Inject under fluoroscopic control or take roentgenograms immediately after injection.

Contraindications to Salpix or Hysterosalpingography are:

(1) Presence of severe vaginal infections.

(2) Marked cervical erosion or endocervicitis.

(3) Existing or recent pelvic infection.

(4) During the immediate pre- or post-menstrual phase.

(5) Pregnancy

Adequate experimental evidence and clinical trial in over 350 cases by Rubin (13), and 22 cases at the University of Nebraska has demonstrated that Salpix represents the nearest approach to the ideal x-ray contrast medium for use in hysterosalpingography.

SALPIX CASE REPORTS

Howell, Ethyl Age 32 Number 114481
Chief Complaint: mass in LLQ, pain in LLQ
Pelvic Examination:
Vagina; no inflammation, good support.
Cervix; chronic cervicitis, small, firm, displaced to the right.
Uterus; normal size, firm, symmetrical, displaced to the right.
Adnexa; 8 cm. cystic mass in the left adnexa.
Clinical Diagnosis:
(1) Chronic pelvic inflammatory disease.
(2) Left ovarian cyst.
(3) Bilateral chronic salpingitis with a small pyosalpinx.
Radiological Findings:
The uterine cavity is displaced far to the right by a soft tissue mass in the left adnexal area, no tubal patency bilaterally.
Remarks:
No reaction to the dye, good film. On 5/27/53 a left salpingo-ophorectomy and cornual resection of the right tube was performed.

Barkdall, Juanita Age 22 Number 114648
Chief Complaint: menorrhagia, the patient is bleeding at present.
Pelvic Examination:
Vagina; good support, no lesions.
Cervix; small, firm clean, mobile.
Uterus; firm, symmetrical, antiflexed, mobile.
Adnexa; no masses.
Clinical Diagnosis:
Functional menorrhagia.
Radiaological Findings:
Normal appearing uterine cavity, tubes patent bilaterally.
Remarks:
No reaction to the dye, good film.

Walter, Martha Age 47 Number 114676
Chief Complaint: Menorrhagia.
Pelvic Examination:
Vagina; good support, no lesions.
Cervix; clean, small, firm, dark blood oozing from the os.
Uterus; antiflexed, symmetrical, normal size, firm.
Adnexa; no masses
Clinical Diagnosis:
Endometrial polyp, benign.

Radiological Findings:

Filling defect in the left lateral wall of the uterine cavity. Both tubes are patent and appear normal.

Remarks:

No reaction to the dye, good film.

Woods, Dorothy Age 20 Number 113341

Chief Complaint: Sterility, lower abdominal pain.

Pelvic Examination:

Vagina; no lesions.
Cervix; small, clean, firm.
Uterus; small, firm, antiflexed.
Adnexa; no palpable masses.

Clinical Diagnosis:

Anxiety tension state, hypothyroidism.

Radiological Findings:

Normal uterus, tubes patent bilaterally.

Remarks:

No reaction to the dye, good film.

Beachy, Wilma Age 29 Number 114730

Chief Complaint: Dysmenorrhea, dyspaunia, heaviness in pelvis. meno-metorrhagia.

Pelvic Examination:

Vagina; 1st degree cysto-urethrocoele, 1st degree rectocoele,
Cervix; no lesions, reddened, granular, bleeds on sponging.
Uterus: 1st degree retroversion, symmetrical, slightly enlarged, firm.
Adnexa; bilateral slight cystic enlargement of the ovaries.

Clinical Diagnosis:

(1) severe cervicitis.
(2) carcinaoma of the cervix.

Radiological Findings:

Tubes patent, shaggy appearing uterine cavity with filling defects at the level of the internal os.

Remarks:

No reaction to the dye, good film.

Wesley, Vivian Age 48 Number 114746

Chief Complaint: Enlarging mass in lower abdomen, heaviness in the pelvis. Periods regular but heavy--q26d X 4d/

Pelvic Examination:

Vagina; good support, no lesions.
Cervix; Small, firm, clean.
Uterus; 4 times normal size, firm, mobile, slight asymmetry.
Adnexa; no masses.

Clinical Diagnosis:

Leiomyomata uteri

Radiological Findings:

Cresent shaped uterine cavity displaced far to the right, mottled calcific density also noted inferior to the cavity, no tubal patency noted.

Remarks:

The patient developed a fever of 103 degrees with dysuria right after the test. Was put on combiotic and was afebrile in 2 days.

Gift, Margaret Age 51 Number 114767

Chief Complaint: Soreness in lower abdomen, dysmenorrhea

Pelvic Examination:

Vagina; slight cystocoele, 1st degree rectocoele, no lesions.
Cervix; reddened, firm, eroded.
Uterus; asymmetrical, firm, nodular, 3 times normal size.
Adnexa; no masses.

Clinical Diagnosis:

(1) Leiomyomata uteri
(2) cervicitis
(3) subsiding appendicitis

Radiological Findings:

Irregular uterine cavity with a patent right tube, vascular about a tumor in the left lateral uterine wall.

Remarks:

No fever or reaction to the dye, excellent film.

Warren, Minnie Age 43 Number 114890

Chief Complaint: menorrhagia for 5 years with anemia(Hb 9.0gms) Patient bleeding now

Pelvic Examination:

Vagina; blood present in the vagina, 1st degree cystocoele and rectocoele.
Cervix; nabothian cysts, erosion, blood coming from the os.
Uterus; 2 times normal size, mobile, firm, globular, asymmetrial
Adnexa; no palpable masses.

Clinical Diagnosis:

Leiomyomata uteri

Radiological Findings:

Left submucous mass projecting into the uterine cavity, right tube patent, left tube did not visualize.

Remarks:

No reaction to the dye, good film.

Milroy, Helen Age 45 Number 114897

Chief Complaint: Menorrhagia for 7 years, polymenorrhea q14d, leukorrhea, constipation.

Pelvic Examination:

Vagina; 1st degree cystocoele, 1st degree rectocoele, no lesions.

Cervix; large, eroded about os.

Uterus; 3 times normal size, nodular, firm, mobile, antiflexed.

Adnexa; no masses on right, cyst? on left.

Clinical Diagnosis:

(1) Submucous fibroid

(2) Adenomyosis

(3) Cystocoele and rectocoele

(4) Cervicitis

(5) Paeudomucinous cyst on left ovary

Radiological Findings:

Enlarged uterine cavity with suggestion of intruterine cavity mass projecting in from the right, tubes failed to fill.

Remarks:

No reaction to the dye, good film.

Graves, Maxine Age 39 Number 114917

Chief Complaint: menorrhea, dysparunia, slight stress incontinance heaviness and weight in the pelvis.

Pelvic Examination:

Vagina; 1st degree cystourethrocoele, 1st degree rectocoele, no lesions.

Cervix; 2nd degree protrusion, erosion, nabothian cysts.

Uterus; 2 times normal size, retroverted and retroflexed.

Adnexa; no masses

Clinical Diagnosis:

(1) partial prolappe

(2) cystocoele, urethrocoele, and rectocoele

(3) cervicitis

Radiological Findings:

Good film, tubes didn't visualize.

Remarks:

No reactinn to the dye

Cross, Helen Age 40 Number 114888
Chief Complaint: menorrhagia for 1 year, mass in lower abdomen for 6 months.
Pelvic Examination:
Vagina; good support, no lesions.
Cervix; small, clean, firm, blood oozing from the os.
Uterus; size of a 4 months gestation, nodular, firm, mobile.
Adnexa; no masses.
Clinical Diagnosis:
Leiomyomata uteri
Radiological Findings:
a very irregular uterine cavity, tubes did not visualize.
Remarks:
No reaction to the dye.

Holtkamp, Alice Age 50 Number 114726
Chief Complaint: menorrhagia for 5 months, heaviness in lower abdomen, vaginal hemorrhage with blood transfusions in May 1953.
Pelvic Examination:
Vagina; 2nd degree cystocoele and rectocoele, no lesions.
Cervix; 2nd degree discensus, chronic cervicitis, hypertrophied.
Uterus; 2 times normal size, antiflexed, mobile, firm.
Adnexa; no masses.
Clinical Diagno sis:
Rule out adenocarcinoma of the endometrium.
Radiological Findings:
Tubes failed to fill bilaterally, moth eaten filling defect in the left vornual area.
RRemarks:
no reaction to the dye, good film.

Beckstead, Eunice Age 25 Number 115146
Chief Complaint: menometorrhagia for several months.
Pelvic Examination:
Vagina; good support.
Cervix; hypertrophied with moderate cervicitis and erosion.
Uterus; upper normal in size, antiverted, regular, mobile.
Adnexa; clear.
Clinical Diagnosis:
Endometrial hyperplasia (estrogen stimulation)
Radiological Findings:

normal uterine cavity, tubes patent bilaterally.
Remarks:
no reaction to the dye, good film.

Christlieb, Irene Age 46 Number 115237
Chief Complaint: menorrhagia
Pelvic Examination:
Vagina; good support, no lesions.
Cervix; clean, firm, mobile.
Uterus; antiverted, mass arising from the left about 8 cm.
Clinical Diagnosis;
Leiomyomata uteri
Radiological Findings:
uterine cavity normal, tubes patent, possible pressure from above on the uterus.
Remarks;
cra mping during the injection of the dye. Patient was operated and no fibroid was found, she had an endometrial polyp not outlined by x-ray. endometrial hyperplastic and mild adenomyosis.

Epley, Ruth Age 22 Number 115205
Chidf Complaint: habitual abortion, menorrhagia and irregular bledding
Pelvic Examination:
Vagina; good support, no lesions.
Cervix; clean, firm and mobile.
Uterus; anterior, mobile, normal size.
Adnexa; right ovary palpable.
Clinical Diagnosis:
Irregular shedding endometrium?
Radiological Findings:
endometrial cavity normal, tubes patent.
Remarks:
cramping during the injection of the dye. Path. report said secretory and proliferative endometrium.

Bell, Elsie Age 47
Chief Complaint: menorrhagia of 1 years duration.
Pelvic Examination:
Vagina; no lesions, good support.
Cervix; clean, firm, mobile.
Uterus; enlarged, multiple myomata.
j

Clinical Diagnosis:
leiomyomata uterus.
Radiological Findings:
cavity well outlined, submucous myoma outlined with dye on air contrast.
Remarks:
no reaction to the dye, good film. Patient died 12 hours later apparantly of a transfusion reaction.

Gustin, Helen Age 35 Number 115652
Chief Complaint: menorrhagia
Pelvic Examination:
Vagina; no lesions, good support.
Cervix; chronic cervicitis, mobile.
Uterus; anterior, mobile, uniform, upper normal size.
Adnexa; clear.
Clinical Diagnosis: deferred
ddx (1) submucous fibroid
(2) endometrial polyps
(3) " hyperplasia
(4) " carcinoma
Radiological Findings:
normal hysterogram; tubes patent.
Remarks:
cramping during the injection of the dye;

Deshman, Sylvia Age 42 Number
Chief Complaint: backache, lower abdominal pain, menorrhagia.
Pelvic Examination:
Vagina; no lesion, clean, good support
Cervix; laceration, erosion, and eversion.
Uterus; anterior, normal size, myaoma 6 cm. on the right.
Adnexa; clear.
Clinical Diagnosis:
Leiomyomata uteri
Radiological Findings:
Indentation of the right wall of the uterus suggesting pressure.
Remarks:
No reaction to the dye.

Theen, Emma Age 50 Number 116068
Chief Complaint: menorrhagia

Pelvic Examination:

Vagina; good support, no lesions.
Cervix; clean, displaced anteriorly.
Uterus; diplaced to the right, normal size.
Adnexa; a large mass in the left and posterior cul-de-sac.

Clinical Diagnosis:

(1) myoma uterus
(2) ovarian tumor

Radiological Findings:

uterus displaced to the right, tubes patent.

Remarks :

no reaction to the dye.

Earle, Dorothy Age 32 Number 115343

Chief Complaint: daily bleeding of 5 weeks duration.

Pelvic Examination:

Vagina; good support, no lesions.
Cervix; transverse laceration, mild chronic cervicitis.
Uterus; anterior, enlarged 8-10 cm.
Adnexa; clear.

Clinical Diagnosis:

(1) incomplete abortion.
(2) myoma uterus

Radiological findings:

bicornate uterus

Remarks:

hysterectomy 8/27/53--bicornate uterus and uteral cavities.
one cervical canal.

Maddeochs

Chief Complaints: sterility, 8 years duration, no pregnancies.

Pelvic Examination:

Vagina: negative
Cervix: negative
Uterus; anterior, normal size, mobile.
Adnexa; clear

Clinical Diagnosis:

anovulatory menses

Radiological Findings:

normal uterus, tubes patent

Remarks:

no reaction to the dye, good film

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