

Alcohol Sclerosing Ovarian Cystic Lesions, 20 Years Experience

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ABSTRACT

The purpose of the study is to present technique of puncture and conservative treatment of cystic ovarian lesions. The following criteria were included: 1) Cyst should be unilocular, sonolucent, with a smooth inner wall of capsule, without septa and without neovascularization on transvaginal color and power Doppler. 2) Serum CA-125 levels must be lower than 35 U/mL. The capsule of the cyst was punctured with a 18 gauge needle under the control of 5 MHz transvaginal probe. Cyst fluid was sent for cytologic examination. After complete emptying of the cyst, we injected sterile 95% ethanol in the 50–75% of the evacuated liquor amount. The alcohol remain in the cyst from 5 to 20 minutes and was then aspirated completely. We punctured cysts in 366 patients aged from 18 to 65 years, volume of cyst being between 40 and 300 mL. Patients were monitored for 24 hours and follow-up examinations were 3, 6 and 12 months after the procedure. Three cysts were ruptured (0.8%) and alcohol split in the Douglas cavity. Intensive pelvic pain had 8.1% and relapse appeared in 8.2% of the patients. Technique of puncture is simple and easily performed. Method of treating by 95% alcohol has demonstrated good results. Relapse we treated by laparoscopy or laparotomy.

Key words: ultrasound-guided aspiration, ovarian cysts, alcohol sclerosation

Introduction

Cystic ovarian lesions are very often follicle or lutein functional cysts, sometimes serous cystadenomas. Follicle cysts vary in size from microscopic to 4 cm in diameter, rarely larger. These cysts represent the failure of the fluid in an incompletely development follicle to be reabsorbed. Inner wall of the capsule is made of granulosa cells. Lutein cysts are divided in two types: granulosa lutein, found within a corpus luteum and theca lutein associated with hydatidiform mole. Cavity of the lutein cysts is lined by luteinised granulosa and theca cells. They are 4–6 cm in diameter, raised and often filled with brown serous fluid. Benign serous tumors are commonly unilocular, have a smooth surface and contain clear yellow fluid. Outer and inner wall of cystic tumors are smooth and shining. The epithelium is of much lower columnar type, with ciliation of many of the cells. In other parts of the same cyst wall the epithelium may be cuboidal or peg-shaped. On the border between epithelium and stroma there is a clean basal membrane.

Most cysts up to 4 cm in diameter disappear spontaneously within two or three months without therapy. If the cysts persist or grow up to 5–6 cm we suggest puncture and for bigger ones, operation. The problem of puncture is relapse on follow-up examination¹.

Therefore, we start to use concentrated alcohol for sclerosation cystic ovarian lesions. The same method has been used successfully in the treatment of renal and liver cysts^{2,3}. Alcohol is a sclerosing agent and a preservative; on contact it causes the epithelial cells lining a cyst to become nonviable.

Patients and Methods

The study included patients with ovarian cystic lesions in the age between 18 and 65. For this procedure the cyst should be unilocular, sonolucent, with a smooth inner wall of the capsule, without septa and without

neovascularisation on transvaginal color and power Doppler. Serum CA-125 levels must be lower than 35 U/mL. This offers the possibility of more conservative management of ovarian cysts that have a low risk of malignancy.

Intravenous analgesia was achieved with diazepam prior to the procedure. The patients were placed in the lithotomy position. A speculum was inserted to enable visualization of the posterior part of the vaginal fornix, which was disinfected with 10% povidone iodine. For the local anaesthesia we injected 2% lidokain into the posterior fornix. For the general anaesthesia we used fentanyl 0.05–0.10 mg and thiopental natrium 400–500 mg i.v. Under the control of a 5 MHz transvaginal probe we calculated cyst fluid volume and punctured capsule by an 18 gauge needle. In some cases manual compression of the cyst was performed through the abdominal wall to facilitate needle penetration. The cyst was evacuated by a syringe and cyst fluid was immediately sent to cytologic laboratory. Aspirated fluid was examined cytologically by using May Grinwald Giemsa or Papanicolaou stain quick method on the smears prepared from centrifuged deposit. The following parameters were included in the evaluation: cellularity, cell types, cellular arrangement and back-ground. Cytologic slides from ovarian samples were reviewed and classified as negative, suspicious and positive for malignancy. Analysis lasts approximatively 15 minutes and patient was whole time in analgesia or anaesthesia. If the cytologic findings are negative we inject sterile 95% ethanol in the 50–75% of the evacuated liquor amount. The alcohol remained in the cyst from 5 to 20 minutes and then it was aspirated completely. Patients were monitored for 24 hours and follow-up examinations are 3, 6 and 12 months after the procedure.

Results

We punctured and sclerosed 366 patients with ovarian cysts volume between 40 and 300 mL, 226 in the local anaesthesia and 140 in the general i.v. anaesthesia (Table 1). All of the ovarian cysts were unilocular, sonolucent, with smooth inner wall of the capsule and without septa on the ultrasound examination. Serum CA-125 levels were lower than 35 U/mL in all cases. Capsule of the cysts was without neovascularisation on transvaginal color and power Doppler. The resistant index (RI) was higher than 0.70 in every case. Aspirated fluids were clear, serous and yellow to brownish colors. Replacement of 95% ethanol we injected in all cysts. Intensive pelvic pain had 20 of 226 patients with local anaesthesia (8.1%), but we treated them conservatively with spasmolitics intravenously. Three cysts of 366 were ruptured (0.8%) and alcohol split in the Douglas cavity without bowel damages or other

TABLE 1
SCLEROSATION OVARIAN CYSTIC LESIONS

With the local anaesthesia	226
With the general anaesthesia	140
Total	366

TABLE 2
COMPLICATIONS WITH SCLEROSATION

Pelvic pain	20 of 226 (8.1%)
Cyst rupture	3 of 366 (0.8%)
Relapse after 3 months	30 of 366 (8.2%)

structures in abdomen. Relapse after 3 months appeared in 30 patients (8.2%) when the contact between alcohol and the cyst wall was incomplete (Table 2). At one patient we have seen cyst on the same ovary one year later. On the follow-up examinations 3, 6 and 12 months after the procedure women with regular menstrual cyclus had no menstrual abnormalities. Four patients were pregnant early after the procedure and in two of them delivery was made by Cesarean section because of obstetrical reason. On the operation ovaris were macroscopically without changes.

Discussion

Ultrasound-guided aspiration for the evaluation of ovarian cysts has been long used for diagnostic and therapeutic purpose⁴. The biggest problem of aspiration are recurrences especially after puncturing large ovarian cystic lesions^{5,6}. Because of that we use 95% ethanol which in contact with capsule of cyst destroys epithelial cells.

None of 366 cystic ovarian lesions in our cases were not suspect on malignancy on the ultrasound and color Doppler examination^{7,8}. All cytologic findings were negative and serum CA-125 levels were lower than 35 U/mL⁹.

We first treated a group of 10 postmenopausal patients with above procedure because we did not know how the concentrated alcohol would effect on healthy ovarian tissue. The maximum diameter of the cysts at the time of presentation was 4–6 cm, in one case 7.5 cm. There were no cyst relapses in this group 3 months later. We controled them during 5 years and all gynecological examinations were normal¹⁰.

The second group of 132 cases had ovarian cysts with volume between 40 and 140 ml and women were in the age of 20 to 55 years. Out of 132 patients with negative cytologic findings 42 were over 40 years old. In these patients after complete evacuation of cyst contents we injected sterile 95% alcohol amounts to 50% of the evacuated fluid. Alcohol remained in place for 5 minutes and then it was completely evacuated. Three of the patients had very intensive pelvic pain but we treated them with spasmolitics i.v. Cysts of 90 younger age patients we punctured without alcohol sclerosing and 22 relapsed 3 months later which means 24.44%. In the 42 cases where the replacement of concentrated alcohol was done, relapse appeared in 2 patients (4.76%), where the volume of cyst fluid was bigger than 100 ml. On the follow-up 3, 6 and 12 months after the procedure no menstrual abnormalities has been seen¹¹. We concluded that alcohol does not destroy ovarian tissue.

Therefore we began to use the same method for cyst relapses in younger age patients^{12,13} and then for whole population of women^{14–16}. We use the same method for the therapy of large cystic ovarian lesions volume between 100 and 300 mL. After one year, relapse appeared in 41.60% of patients¹⁷. For these cases it is better to inject 75% of the quantity of aspirated fluid and let the alcohol remain in place for 10–20 minutes. When we held to this criterions, large cysts recurrences were reduced to the minimum values.

Work in progress by Bret et al.¹⁸ described preliminary results with similar method. Seven postmenopausal patients with recurrent ovarian cysts after transvaginal needle aspiration underwent alcohol sclerosing. The maximum diameter of the cysts was 5–11 cm. The cysts were unilocular or had thin septations. The walls were regular, although two cysts had some foci of wall calcification and one cyst had a 5 mm diameter echogenic mural nodule. At the time of alcohol sclerosing, the recurrent cysts had partly collapsed with diameter of 3–5 cm. After aspiration of the cyst contents, approximately two-thirds of the aspirated fluid was replaced with 100% alcohol that was left in place for 20 minutes and then aspirated. Cyst contents were sent for cytologic examination prior to alcohol injecting. At the end of the procedure, the alcohol was aspirated and that fluid was also sent for cytologic examination. Patients were monitored for 2 hours after the procedure and were then allowed to go home. No complication was observed. They were asked to return 1, 3 and 6 months after the procedure for follow-up examination. Four cysts had not recurred and one patient underwent surgery because mucinous material was

found on analysis of the specimen, which was proved to be a benign cysadenoma. Two cysts recurred, and one patient underwent surgery.

For sclerosation simple ovarian cysts it is used 5% tetracycline. Of 24 patients none of them had complications and relapses after 6–36 months period¹⁹.

Cytologic findings aspirated fluid from the cysts do not always correlate with hystology^{20,21}. Therefore in diagnostic procedure need to be used more parameters. Cytology can make difference between functional and organic cystic lesion in 54.9% cases, ultrasound in 50.8% and estradiol in the cyst fluid in 94.4% cases. Combination of all three methods increase diagnosis to 97.8%²². Also there can be determined level of inhibin from aspirated fluid which signifies the presence of granulosa cells in the capsule of functional cysts²³.

Tumor markers CA-125 and CEA are products of organic cysts epithel and we use them in diagnostic procedure with cytologic parameters.

Cyst relapses from our study we operated by laparoscopy or laparotomy. Hystologically neither patient had ovarian malignancy.

Conclusions

Technique of punction is simple and easily performed. Method of treating ovarian cystic lesions by 95% ethanol showed good results. The relapse were treated surgically by laparoscopy or laparotomy.

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SKLEROZACIJA CISTIČNIH TVORBI JAJNIKA, 20 GODINA ISKUSTVA

SAŽETAK

Svrha rada je prikazati tehniku punkcije i konzervativno liječenje cističnih tvorbi jajnika. Uključeni su slijedeći kriteriji: 1) Cista treba biti jednokomorna, bistrog sadržaja, glatke unutrašnje stjenke čahure, bez pregrada i bez neo-vaskularizacije na transvaginalnom obojenom i osnaženom dopleru. 2) Serumske vrijednosti CA-125 moraju biti ispod 35 U/mL. Čahura ciste se punktira iglom od 1,8 mm ultrazvučnim navođenjem sondom od 5 MHz. Tekući sadržaj ciste pošalje se na citološku analizu. Nakon kompletnog pražnjenja cista se ispuni sterilnim 95% etilnim alkoholom volumena između 50 i 75% evakuirane tekućine. Alkohol ostaje u cisti između 5 i 20 minuta a onda se u cijelosti aspirira. Punktirali smo 366 bolesnica sa cistama jajnika volumena između 40 i 300 mL u dobi od 18 do 65 godina. Pacijentice su praćene kroz 24 sata a kontrolni pregledi su rađeni nakon 3, 6 i 12 mjeseci. Tri ciste su prsnule (0,8%) i alkohol je iscurio u Douglasov prostor. Intenzivnu bol u zdjelici imalo je 8,1% a recidiv se pojavio u 8,2% bolesnica. Punkcija je jednostavna i lako izvodljiva. Postupak s 95% alkoholom pokazuje dobre rezultate. Recidivi se tretiraju laparoskopijom ili laparotomijom.