

## CULDOSCOPY

In evaluation of gynaecological endocrinological status

by

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Culdoscope is one of the specialised endoscopic instruments introduced in clinical practice by Decker and Cherry in 1944. It provides transvaginal telescopic visualisation of the female pelvic viscera through a trocar puncture in the cul-de-sac with the patient in knee-chest position. The technique is simple and safe in properly selected cases and to an experienced operator it provides immediate and conclusive evidence in the diagnosis of obscure pelvic conditions in most of the cases.

### Material and Method

The cases suitable for culdoscopic examination were selected from the patients attending the gynaecological endocrinological out-patient department at King Edward VII Memorial Hospital. One hundred consecutive cases from July 1967 onwards are included in this series.

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The patients came with the problems of menstrual disturbances including primary and secondary amenorrhoea, hirsutism or infertility, specially in association with anovulatory cycles. Majority of them complained of more than one of these as they are associated conditions. Table I shows the distribution of patients according to their chief complaints.

TABLE I  
*Chief complaints*

Chief complaints	Number of patients
Primary amenorrhoea	18
Secondary amenorrhoea	42
Oligohypomenorrhoea	28
Infertility	73
Hirsutism	12

The youngest patient was 17 years old, the oldest patient was aged 40 years, while majority of the patients, i.e. 63/100 belonged to the age group 21 to 30 years. At other centres culdoscopy has been safely carried out in patients varying in age from 11 to 63 years.

Table II shows the marital and fertility status of the patients. Intact hymen was not considered as a contraindication which is evident by the

fact that 14 of the patients were unmarried. Out of the 86 married patients only 8 patients had one or more previous full term vaginal deliveries, 4 patients gave history of 1 or 2 abortions, while 74 patients had never conceived.

TABLE II  
*Marital and Fertility status*

Unmarried	..	..	..	14
Married	..	..	..	86
Nullipara	..	..	..	74
F.T.N.D.	..	1	..	4
		2	..	1
		3	..	1
		4	..	2
Abortions	1	..	..	3
	2	..	..	1
Total	..	..	86	100

Routine haemogram, examination of urine and stool and screening of the chest were done for all the patients. Serial vaginal smears and changes in the palm leaf appearance of the cervical mucus were studied to assess the hormonal status. Besides these, other relevant diagnostic investigations and procedures were carried out in selected cases. These include x-ray chest, x-ray skull, hormonal excretion studies, buccal smear for sex chromatin, thyroid function studies, blood sugar level, etc. Hanging drop preparations were studied under the microscope and any vaginal sepsis was adequately treated before subjecting the patient to culdoscopic examination. The patients were admitted to the ward on the previous day and were prepared as for any surgical procedure.

Properly given knee-chest position is the most important single factor in contributing to the safety and suc-

cess of the culdoscopic examination and there can be no compromise for the same (Fig. 1). The usual operating room table was quite satisfactory for the procedure, which lasted for about 5 to 15 minutes.

Table III shows the type of anaesthesia used. Local anaesthesia achieved by infiltration with 1% novocaine without adrenaline was the method of choice except in all but one of the unmarried patients.

TABLE III  
*Type of anaesthesia*

Type of anaesthesia	Number of patients
General anaesthesia	.. 9
Saddle block	.. 4
Local anaesthesia	.. 87
Total	.. 100

Either the standard Decker culdoscope or Clyman panculdoscope was used for the procedure. Pneumoperitoneum was induced using the atmospheric air in all the cases. After completion of culdoscopic visualisation most of the air was expressed out in all the patients except one in whom it was made use of to demonstrate the enlarged ovaries on gynaecography plates. However, this patient was very uncomfortable for many days post-operatively. The puncture site was left as such.

The incidence of failure to enter the peritoneal cavity is reported as varying from 1.7 to 30% by different workers. In our cases the overall incidence was 12%. (It was 20% in the first 50 cases and 4% in the next 50 cases). Three out of the 12 patients were unmarried. Table IV shows the probable causes of failure.

TABLE IV  
Causes of failure

Causes of failure	Number of patients
T.O. mass of tuberculous origin (proved by laparotomy and histopathology) .. ..	2
R. V. fixed uterus .. ..	1
Narrow vagina, small cervix and pea size uterus .. ..	1
Adhesions in posterior pouch (one case proved to be Koch's by other evidences) .. ..	8
Total .. ..	12

We did not come across any major complications as reported in the literature, like excessive bleeding from the puncture site, rectal perforation, retroperitoneal emphysema, prolapse of the omentum or appendices epiploicae through the puncture site. The commonest minor complication was mild abdominal discomfort and shoulder pain in erect posture in most of the patients. However, it responded to the analgesics and subsided within 2 to 4 days. No death due to culdoscopy has ever been reported in the world literature.

Contraindications to the procedure are: Presence of adhesions in the pouch of Douglas and obliteration of the space, as recognized by negative ballooning sign, retroverted fixed uterus, a mass in the posterior fornix more than 6 to 8 cms., congenital absence of uterus and cervix, presence of acute local infection, inability to assume and maintain the knee-chest position, inadequate vagina and introitus because of previous operation, malformation or disease.

The findings on culdoscopic examination are shown in Table V.

TABLE V  
Culdoscopy findings

Findings	Number of patients
Normal findings .. ..	31
Small ovaries .. ..	14
Atrophic ovaries .. ..	5
Streak ovaries .. ..	5
Enlarged ovaries .. ..	4
Stein-Levanthal syndrome .. ..	10
Pelvic inflammatory disease .. ..	17
T.O. masses with caseation .. ..	2
T.O. masses without caseation .. ..	7
Adhesions .. ..	8
Mullerian hypoplasia .. ..	1
Uterine hypoplasia .. ..	1
Total .. ..	88
Associated fibroids .. ..	3
Functioning ovarian tumours ruled out in cases of hirsutism .. ..	12

The value of culdoscopy in evaluation of gynaecological endocrinological status lies in the fact that an experienced gynaecologist can assess the functional status by visualising the gross appearance of the ovaries; and culdoscopy, when not contraindicated, is preferable to the other alternatives viz. laparoscopy or exploratory laparotomy. Thus it helps in evaluating the cases of primary or secondary amenorrhoea, oligohypomenorrhoea, etc. It aids in giving prognosis to the patient, e.g. presence of bilateral streak ovaries in a case of amenorrhoea or sterility would suggest a poor prognosis. In a case of gonadal dysgenesis visualisation by culdoscopy is indispensable (Greenblatt).

Stein relies upon visual proof for the diagnosis of Stein-Levanthal

syndrome. He prefers culdoscopy to verify the suspicion of bilateral palpably enlarged ovaries, which look polycystic and pearly-white with characteristic vascular striae. By establishing a definite diagnosis one can advise the correct line of treatment viz. clomephene citrate, if available, or wedge resection of the ovaries.

Culdoscopy has opened a new field for the student of human reproductive physiology. When more facilities are available one can take ovarian biopsy, aspirate the follicular content for microanalysis or observe the response of the ovaries to the administration of gonadotrophins in follow-up of those cases.

In cases of sterility it is specially indicated when usual diagnostic tests are unable to explain the cause satisfactorily or when one suspects periaxial adhesions or ovulatory failure.

In our country one has to keep tuberculosis in mind as a differential diagnosis while evaluating any pathological condition. In the successful 88 cases there was evidence of pelvic inflammatory disease in 17 cases, while 2 cases showed frank tubercles. In other 7 cases with tubo-ovarian masses and 8 cases showing presence of adhesions the diagnosis of tuberculosis was proved by other evidences in 6 patients, while in 5 of them there remained a strong suspicion of the same by corroborative evidences though it could not be definitely proved.

Besides these other indications for culdoscopy are diagnosis of tubal gestation and endometriosis, to determine operability of the tubes before contemplating tuboplasty, in

cases of a small pelvic mass of indefinite origin, unexplained pelvic pain or postmenopausal bleeding and unsatisfactory bimanual examination because of obesity.

#### *Summary and Conclusion*

This paper presents a study of 100 cases of culdoscopy from gynaecological endocrinological department. The procedure, anaesthesia, indications, contraindications and complications are discussed. In conclusion, we have found culdoscopy as an easy, informative and safe diagnostic procedure.

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*See Fig. on Art Paper VII*