CRYOSURGERY—A NEW MODALITY FOR THE MANAGEMENT OF EARLY ENDOMETRIOSIS

by

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Right from the time Von Rokitanksy first described endometriosis interna or adenomyosis, till today, there is always something interesting and absorbing happening. May it be a etiology or diagnosis or treatment. If endometriosis is with mild symptoms and without gross findings, expectant treatment is resorted to with a hope that early pregnancy results and analgesics tide her over her pain. However, if endometriosis progresses or else produces disturbing symptoms, hormonal or surgical treatment has to be instituted. No doubt, surgical excision is excellent as removal of lesion frees her from anxiety. Surgical excision, unfortunately, involves nothing less than opening an abdomen.

Material and Methods

Cryosurgery for various gynaecological indications is carried out from October 1973. Use of this therapy was extended to a new indication, confirmed diagnosis of endometriosis, in the Department of Obstetrics and Gynaecology at K.E.M. Hospital and Private clinic, Bombay, from March 1976 to May 1979. Stimulated by favourable response in 2 cases with endometriosis of rectovaginal septum, it was later tried through a laparoscope for endometriosis of uterosacral ligament and directly for endometriotic nodule on rectus sheath after incising abdominal wall up to the site. This experimental work, so far, has been carried out on 7 patients with endometriosis. Before subjecting patients to Cryosurgery, history, clinical findings and treatment, if any given, were carefully recorded. Diagnosis of endometriosis was confirmed preoperatively, and by histopathological examination of biopsy tissue from the lesion in all but 1 case. Operative procedure was varied to suit each case. All women were carefully followed postoperatively for subjective and objective response. Thus material comprised of experimental work of subjecting endometriosis to cryosurgery under following groups and situation.

I Endometriosis of rectovaginal septum treated vaginally II Endometriosis of uterosacral ligament treated endoscopically and III Endometriosis of abdominal wall treated directly after incision till site.

I ENDOMETRIOSIS OF RECTOVAGINAL SEPTUM

CASE 1

Mrs. M.S., aged 21, married for 6 months, came in March 1976, with complaints of severe dysmenorrhoea and dyspareunia of 3 months' duration. Her menstrual cycles were regular. Past history was without significance. Relevant clinical findings being purple spot of 0.5 cm. X 1 cm. seen higher up on posterior vaginal wall on speculum examination. Bimanual examina-

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tion confirmed a nodule of 1 cm. diameter at the site of rectovaginal septum. She was therefore, diagnosed as endometriosis of rectovaginal septum. She was treated with hormones without response. Cryosurgery was performed under general anaesthesia of short duration. She was kept in lithotomy position and Sims speculum inserted half way on post vaginal wall, while traction on cervix with a vulsellum made site of lesion more accessible for therapy. General purpose probe of Cryomedics International Sales Co. Inc., was applied on the lesion while colleague Gynaecologist kept his finger in the rectum to guide the positioning of the cryoprobe and keep it away from rectum. Endometriotic nodule was frozen for 3 minutes. Due care was exercised to keep probe away from the adajacent rectal wall and keep in constant contact with site of lesion and not beyond. Refrigerant used was nitrous oxide. She went home on the same day with uneventful postoperative period. Eight weeks later examination revealed complete disappearance of endometriotic nodule with total symptomatic relief (Fig. 1).

Case 2

Mrs. B. M., aged 24 years, unmarried, came in September 1976 with complaints of heavy menstrual flow, severe dysmenorrhoea and dyspareunia. Bimanual and rectal examinations revealed firm, discrete, round nodule of 1.5 cms. diameter situated posteriorly at the site of rectovaginal septum. Speculum examination revealed purplish spot, higher up, near posterior fornix. Pelvic findings otherwise were unrewarding. Nodule was subjected to Cryosurgery as in previous patient. Once again rectal finger proved a safe guide. Postoperative follow up at 4 weeks, revealed complete disappearance of nodule and total subjective relief.

Thus two young women, in a spell of 9 months, between January 1976 to September 1976, came with endometriosis of rectovaginal septum. These patients were earlier treated with hormonal therapy without response.

Both patients were private patients and referred by my senior colleague Dr. M. R. Narvekar. In fact his rectal finger guided the probe and protected the rectum. Cryotherapy gave unbelievable success.

II CRYOSURGERY THROUGH LAPAROSCOPE FOR ENDOMETRIOSIS OF UTEROSACRAL LIGAMENT

Case 3

Mrs. B. S., aged 28 years, Gravida O, came in December 1978 with complaints of dysmenorrhoea and dyspareunia for 1 year and primary sterility of 4 years duration. Bimanual and rectal examination revealed a nodule on right uterosacral ligament of 1 cm. x 1 cm. She had received hormonal treatment in form of contraceptive pills for a period of 6 months but without any response. She was anaesthetised as for operative laparoscopy. To begin with 8 mm. diagnostic laparoscope was introduced and biopsy of endometriotic nodule performed by double puncture. Thereafter 14 mm. size specially prepared trocar and cannula was introduced by second puncture through which cryogun, with general purpose probe, was guided to the site of lesion. (Fig. 2) Freezing was carried out for a period of 5 minutes or more depending on the size of nodule. Due care was exercised to see that the freezing probe remained away from bowel and ureters laterally, closer to uterosacral site. Post-operative follow-up after 3 months revealed complete relief from dysmenorrhoea and dyspareunia while the nodule was impalpable on clinical examination. Histopathology of biopsy tissue confirmed the diagnosis of endometriosis.

Case 4

Mrs. A. S., aged 32, Gravida, O, came in February 1979 with dysmenorrhoea, dyspareunia of 14 months duration and primary sterility of 7 years. Clinical examination revealed a nodule on right uterosacral ligament of 0.75 x 1.5 cms. size. She was earlier treated with hormones for 12 months including Danazol for 6 months. She responded to hormones but slightly and that too subjectively. She was subjected to identical treatment as in case 3. Follow-up examination after 3 months revealed nodule of 0.2 x 0.5 cm. size. Dysmenorrhoea had completely disappeared while dyspareunia was much less. In patients own words "I feel more relieved with cryotherapy than earlier medical treatment". Histopathological examination of biopsy tissue confirmed endometriosis.

Case 5

Mrs. L. D., aged 34 years, Gravida II, married for 12 years came in January 1979 with complaint of dyspareunia for 12 months. Clinical examination revealed both uterosacral ligaments with nodule of 0.5 cm. x 0.5 cm. size. She was not treated with hormones for present trial. She was, similarly, subjected to cryotherapy through laparoscope for 5 minutes on each nodule. Postoperative follow up after 5 months, revealed complete subjective as well as objective relief. There was no trace of endometriosis on pelvic examination. Histopathological examination confirmed the diagnosis of endometriosis.

Case 6

Mrs. T. V., aged 32 years, Gravida I, with last delivery 8 years back, came in April 1979 with complaints of dyspareunia and heavy menstrual periods of 8 months duration and secondary sterility. Clinical examination revealed a nodule on left uterosacral ligament of 2 cm. x 1 cm. size. She had received 3 months hormonal therapy from other gynaecologist but without slightest relief. She was, likewise, subjected to cryotherapy for period of 4 minutes. Follow-up examination 4 months later revealed no trace of nodule on pelvic examination and complete freedom from dyspareunia. Her menstrual cycles are still heavy while conception is awaited for. Because of practical difficulty nodule was not subjected to biopsy.

III ABDOMINAL WALL ENDOMETRIOSIS

Case 7

Mrs. S. S., Aged 29 years, came on 18th May 1979 with complaints of severe abdominal pain and swelling during menstruation. She had abdominal hysterotomy with tubal ligation 18 months ago. Clinically she had only positive finding, a subcutaneous nodule of 2.5 cms. diameter, situated 2 inches laterally on right and below umbilicus. Diagnosis of endometriosis was obvious. After necessary investigations and hospitalisation, patient was operated under general anaesthesia by transverse incision of 4 cms. at the site of nodule (see picture). Skin, subcutaneous tissues and fat cut to reach reddish haemorrhagic nodule of 2.5 cms. diameter with approximately 1 cm. thickness, on anterior rectus sheath. (Fig. 3) Biopsy was followed by application of flat cervical cryoprobe for 5 minutes at two sites (Fig. 4). Abdominal wall was closed in layers. Follow-up examination ten weeks later revealed complete disappearance of endometriotic nodule which otherwise was felt like a jacket botton. Site showed slight induration as after puerperal sterilisation or any surgery. Dysmenorrhoea was absent in all cycles following cryosurgery. In other words, patient showed complete subjective as well as objective relief.

Complications

In the present series of 7 cases treated cryosurgically there was no major complication. Patients undergoing laparoscopic cryotherapy complained of pain, in 3 out of 4 cases, at the site of trocar insertion and so also a patient who had abdominal wall incision for this therapy. Not one of them, had pyrexia or other untoward symptom.

Possible complication, if at all, would be if cryoprobe freezes rectum, by remaining in direct contact, or loop of bowel or broad ligament's contents. This can happen only if operator is careless or due precaution and care is not exercised.

Discussion

Endometriosis externa, unresponsive to hormonal therapy, at times forces the surgeon to open the abdomen for excision. This indeed appears too drastic for a patient who has a small nodule in the pelvis. Electrocauterisation with unipolar cautery through a laparoscope has already shown its hazards when used for female sterilisation. Therefore, a modality which can be done on the outdoor basis without opening, the abdomen and without significant complications should be an asset to a gynaecologist and a boon to the patient.

As the author was using cryosurgery extensively for the known indications, it occurred to extend experimental cryotherapy for endometriotic nodule. Experiments, with 2 cases in a spell of 9 months, indeed gave dramatic and pleasant surprise as nodules in rectovaginal septum completely disappeared. This favourable response opened a new vista for treating selected cases of endometriosis. No doubt, chocolate cyst or big adnexal masses are unlikely to be amenable to this therapy. Besides, with open abdomen to try cryosurgery would be unfair to the patient as excision would be the choice. Therefore, attempt was made to reach endometriotic nodules through an endoscope i.e. without opening abdomen by a less invasive procedure. As the cryogun was larger than available 11 mm. trocar and cannula of Storz or allied company, a possibility of getting manufactured cryogun of smaller size was explored but this proved futile and time lapsed.

Precisely for the same reason, these cases remained unreported till todate. Author however requested one of Surgical Company of Bombay to manufacture larger size trocar through which available cryogun could pass. This was made possible. Thus for the first time, now, it was possible to reach endometriosis in the pelvis without opening abdomen, through a laparoscope and freeze the lesion by Cryosurgery. No doubt this could be done only by a double puncture method as lesion was visualised through a 8 mm. diagnostic laparoscope while cryo was performed through a newly deviced 14 mm. cannula. Thus tried cryotherapy through laparoscope gave remarkable results in 3 out of 4 cases and favourably in 4th.

If this therapy can give a likewise results on a larger number, it may certainly establish firm rooting and no doubt add one more indication for Cryosurgery. Present study is a pilot study to excite more experimental work in future.

With the experimental work in 4 more women, confidence grew to attempt, as well as experiment, for an endometriotic nodule in the abdominal wall. No doubt it appears insecure to incise the abdominal wall till the site of nodule and not excise the nodule but freeze. Applying Cryo or excising the nodule will not make any difference in immediate well-being of the patient. However, a favourable result will trigger to extend this work for larger number of cases. If abdominal wall is cut, excision, a time proven therapy should be better than experimental cryosurgery.

Prof. J. A. Chalmers, a well-known international authority on endometriosis, in both personal discussion on 2nd January 1978 and in reply to author's question at a meeting which he addressed to Bombay Obstetric and Gynaecological Society on 3rd January 1978, said clearly and authentically that neither he has heard of cryosurgery being tried for endometriosis nor has he come across such a report in literature. Even to date, author has not come across any literature suggesting cryosurgical therapy extended to endometriosis. Townsend and Ostergard, pioneer cryosurgeons, used cryosurgery extensively but as yet not reported its use for endometriosis. Likewise Ranney (1974), Reid and Christian (1974), Wilkinson and Mattingly (1974) have treated numberless endometriosis with all sorts of therapy but have not mentioned or reported on endometriosis being treated with this modality. In light of this, it would not be wrong to presume to say that this is the first report of endometriosis treated by Cryosurgery.

Summary

1. Cryosurgery is tried, experimentally, for 7 cases of early endometriosis.

2. Treatment was extended to 3 types of cases namely Endometriosis of Recto-vaginal septum, uterosacral ligament and intra-abdominal wall.

3. Cryosurgery was carried out per vaginum, endoscopically (through a laparoscope) and by incising the abdominal wall till the site of lesion respectively in these three types.

4. For the first time, to the best of knowledge, Cryosurgery has been carried out through a laparoscope for the management of endometriosis.

5. Six out of 7 patients were completely relieved both subjectively and objectively, while 7th one was partially successful.

6. Endometriosis has been for the first time reported as treated by cryosurgery, a new modality in management for early lesion.

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See Figs. on Art Paper I