testicular swelling probably suggests a certain amount of damage to the testicular structure though not sufficient to cause complete atrophy.

Summary

Histological proof is given that division of the spermatic cord can be done safely in repair of inguinal hernia. This procedure may be suitable in the indirect inguinal hernias of adults, and especially after the age of 35–40 years during the primary repair, as well as in recurrent hernias. With the present use of antibiotics the incidence of atrophy could be minimized and gangrene be prevented.

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SURGERY IN THE ALLEVIATION OF DYSpareunia*

BY

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According to the Greek derivation, the term "dyspareunia" means badly mated and implies difficult or painful coitus in the woman. For purposes of discussing the place of surgery in the management of this condition, the various anatomical and pathological states which may be causative factors fall into the following classification: (a) *Congenital*: (1) thickened undilatable hymen, (2) vaginal septa—transverse or sagittal, (3) hypoplasia of the introitus. (b) *Acquired*: (1) surgical operations, (2) retroversion of the uterus, (3) endometriosis, (4) chronic infection.

These various conditions may be the sole problem in the individual case, but their proper surgical correction is essential also in the patient who is seriously disturbed emotionally, as little progress will be made in this respect should any of these conditions remain as an underlying factor in a psychic disturbance.

Congenital

Thickened Undilatable Hymen.—Everyone is familiar with the undilatable hymen and its varying degree of toughness and resistance. Its dilatation or single or multiple incision, usually under local anaesthesia, presents no surgical problem. There may be a problem, however, in determining the most suitable time for the performance of the operation, as in the case of the young woman who has presented herself for a premarital examination, during the course of which this condition was noted. It might be well to bear in mind that, though eventually very necessary, surgical intervention at this particular time might not be properly appreciated.

Vaginal Septa.—Congenital vaginal septa may be transverse, usually situated in the middle third, thus

dividing the vagina into an upper and lower pouch with a communicating central orifice of varying size. If the septum is thin it may simply be excised. However, as is often the case, it is thick and made up of two layers of full-thickness vaginal wall, and one usually finds that the upper pouch is much shortened. Two midline radial incisions are made from the central opening to the vaginal wall, one anteriorly and the other posteriorly, and the two layers of the septum now are evident. By separating these two layers one finds that the vagina is lengthened to normal and that two radial incisions have now become two linear incisions, one on the anterior vaginal wall and one on the posterior; when these are approximated by suture, a normal vaginal pouch results. The sagittal septum is associated with the presence of a complete double uterus and may rarely be responsible for difficult or painful coitus. This septum is also a double layer of vaginal wall and should not be totally excised, as this may very well narrow the vagina, but should be incised throughout its length in the vaginal axis. The two layers separate readily, and the resulting anterior and posterior incisions may then be sutured, thus forming a single adequate vagina.

Hypoplasia of the Introitus.—A poorly developed and narrow introitus may be of such a degree as to require surgical treatment. This is readily done by a small midline incision of the fourchette, which is then closed in a transverse direction. In assessing the causative factor in this complaint this condition should not be confused with that of vaginismus. Surgical incisions in the region of the introitus are to be avoided where possible, as they themselves may be the site of pain, and hypoplasia of the introitus, unless extreme, may best be overcome by the intelligent use, on the part of the two people involved, of nature's dilator.

Acquired

1. Surgical Operations

Unfortunately, and too often, the presenting complaint of dyspareunia follows upon a previous vaginal or even abdomino-pelvic operation. Now the surgeon finds himself in the uncomfortable position of attempting to undo his pain-producing efforts of a previous occasion.

The simple episiotomy, which has become almost a routine in our country, may on occasion be the cause. I feel that as a preventive measure in regard to this complaint, one might well give some consideration to withholding this procedure in a goodly number of women, who, with care at the delivery and appropriate post-partum exercises, will survive with a perfectly functional and comfortable perineum.

The various surgical operations for the repair of genital prolapse of varying degree are possibly the commonest surgical cause of dyspareunia. The simple perineorrhaphy may build up the relaxed perineum to such a degree as to form a high, semi-rigid, uncomfortable or painful barrier, which subsequently must be relaxed.

The repair of the anterior vaginal wall for the correction of the cystocele and prolapse of the uterus should not shorten the anterior vagina by fixing the cervix at a low level against the front wall of the vagina. Properly done, the anterior colporrhaphy should lengthen the vagina and elevate the cervix to its normal position in relation to the vaginal tube. The repair of the posterior wall may be the responsible factor, either by producing too much narrowing, usually in its middle

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third, or by eliminating the posterior fornix or pouch, thus greatly shortening the vaginal tube. The vaginal hysterectomist must temper his enthusiasm with judgment in this same regard, to avoid obliteration of the posterior pouch and leaving in place of the uterus a thickened, tight, and tender scar in the vault.

The abdominal total hysterectomy, which is at present, in the majority of cases, the operation of choice by this route, may also bring about shortening of the vagina by excision of the cul-de-sac and a poorly constructed vault. This should be avoided by a proper anatomical arrangement of the vault supports after removal of the uterus.

Vaginal operations for the correction of prolapse are quite naturally associated in our minds with an older age group, and undoubtedly the greater number of such operations are done at an age when the possibility of a resulting dyspareunia is given very little thought, this being particularly so in the case of the younger gynaecologist. This is a marked variable, and in the individual cases there is no set age period when this consideration may be entirely overlooked.

2. Retroversion of the Uterus

We should all be quite aware of the fact that, whether of the congenital or acquired type, this backward displacement of the uterus is a common finding on examinations and usually not associated with symptoms. However, on a rare occasion, usually in the acquired type, it may be a causative factor in the production of pain during and following intercourse, owing to the forward displacement of the cervix and to the presence of the fundus in the cul-de-sac, both tending to shorten the vagina. To this may be added a hypersensitiveness of the uterus and the parauterine tissues from congestion, which is still further increased by the act of coitus, resulting in discomfort both during and following the act.

Surgical intervention in the form of a so-called suspension operation may rarely be indicated and curative in such a case.

3. Endometriosis

Endometriosis is the occurrence in various sites, other than the cavity of the uterus, of endometrial-like tissue. This tissue responds to the same hormonal stimulus and exhibits many of the same cyclic changes, including bleeding, as does the normal endometrium lining the uterine cavity.

Without regard to the histogenesis of the endometriosis, the common sites of occurrence are the ovary, the utero-sacral ligaments, the recto-vaginal septum, and the serous surface of the uterus low down on its posterior surface, with the adjacent peritoneum of the cul-de-sac and the anterior wall of the rectum in this area. Small areas of endometriosis may be found scattered about on any peritoneal surface, though usually confined to those organs in the pelvis and the large bowel adjacent, the pelvic sigmoid and, less often, the caecum.

The cyclic changes, particularly the bleeding, the result of hormonal stimulation, which is characteristic of this ectopic endometrial tissue, result in a gradual accumulation of blood in the area and rupture through the peritoneal surface. The irritating action of the blood produces a marked cicatrizing response in the tissues involved and the formation of dense adhesions to adjacent peritoneal surfaces. The result of this may

be the production of pain which is characteristically premenstrual in severity.

In those cases in which endometriosis is the responsible factor in dyspareunia, the site of the lesion is most commonly the utero-sacral ligaments and/or the cul-de-sac and adjoining rectum and recto-vaginal septum and the ovaries. The bleeding and scarring of the lesion involving these areas may produce, in addition to the cyclic pre-menstrual pain, a contact pain or dyspareunia of severe degree, the maximum discomfort noticeably occurring in the latter half of the menstrual cycle.

Another characteristic of this disease is that the degree of pain is not always in proportion to the gross extent of the lesion, a great deal of discomfort arising from a minimal involvement, as is often the case where the utero-sacral ligaments are the site; and, on the other hand, there may be large cystic masses in both ovaries with a minimal amount of pain. There is no explanation for this often marked variability in the degree of symptomatology in endometriosis.

Involvement of the utero-sacral ligament produces very tender, thickened, nodular ligaments, and where there is also involvement of the cul-de-sac one feels on vaginal examination the same thickening and puckering of the vaginal wall in the posterior fornix. As a result there may be a considerable shortening of the posterior fornix and contact pain of varying degree. The lesion may extend down in the recto-vaginal septum, causing further thickening and contracture of the posterior wall and a greater degree of discomfort.

Any one or all of these areas may be the sole site of the disease or may be associated with a greater or lesser involvement of the ovaries. When this lesion was first described it was felt that, so long as ovarian production of the hormones responsible for the stimulation and growth of this endometrial tissue occurred, a cure would not be obtained unless the ovaries were entirely removed or were destroyed by irradiation. As this was a disease affecting women during their young and active reproductive period of life, any such treatment was a most radical and undesirable one. It has been adequately demonstrated that eradication of ovarian function is not necessary for cure in this disease and that even in the case where the ovaries themselves are the primary site, and where both organs appear as large, densely adherent masses of endometriomatous tissue, the involved tissue may be excised and sufficient ovarian tissue saved to maintain normal function—that is, menstruation, ovulation, and often pregnancy.

Surgical treatment with excision of this abnormal endometrium-like tissue is indicated in cases with very gross involvement and in those with minimal disease affecting only the utero-sacral ligaments, the cul-de-sac, or the recto-vaginal septum, and where there has been no regression of the lesion or symptomatic relief from the administration of adequate dosage of oestrogens supposedly aimed at suppression of ovulation. In these cases the involved portions of the structures are excised and the ovaries examined carefully for any minute areas of endometriosis, which should also be excised. Resection of the utero-sacral ligaments for this condition also interrupts the pain tracts which pass through these structures, and this also may aid in the relief of pain.

After resection of large masses of endometriomatous tissue from the ovaries, little concern need be felt at the

often numerous small implants, so-called, scattered about the peritoneal surface of the adjacent bladder, rectum, or sigmoid. In the vast majority of cases following such resection there is sufficient interruption of the pituitary-ovarian hormonal axis to allow for regression and atrophy of these small areas of tissue.

4. Chronic Infection

In considering chronic infection as the underlying cause in patients complaining of dyspareunia I would like to mention two types. The first, where there is residual tubal or tubovarian infection which has resisted all treatment by conservative means, such as rest, heat in all forms, and chemotherapy, and where gross palpable masses remain, producing persistent contact pain. The only resort in such patients is obviously the surgical removal of the affected tubes and that portion of the ovary involved, once again being a good conservative and salvaging the normal functioning ovarian tissue, as these patients so often are in the younger age group. It has been our experience in a few such cases in the last few years to obtain very satisfying resolution and symptomatic relief through the administration, by means of an indwelling polythene catheter in the vein, of a continuous penicillin drip, a 24-hour dosage of 25 to 30 million units.

Lastly, I mention the case where on pelvic examination one finds no grossly palpable disease or displacements, where the only finding exhibited by the patient is some tenderness to palpation in the parametrial areas and a general hypersensitivity of the uterus and adnexal areas, especially on movement of the cervix and uterus. There may or may not be some mucopurulent discharge from the cervical os.

In recent years one does not often hear the term "foci of infection," though it is still applicable, and certainly in regard to the cervix. Even where there have been no previous pregnancies the cervix may be the site of chronic low-grade infection, deep-seated in the endocervical glands. The result is a chronic congestion of the cervix and the immediately surrounding tissues, the parametrium, and the utero-sacral ligaments, which become painful on contact.

The infected cervical glands are deeply placed in the endocervix beyond the reach of medicinal douches or vaginal suppositories or local applications. The infection is removed only by actual cauterization or surgical excision. Cauterization carefully but thoroughly done will be successful in a great many cases. Where the infection is more severe or where there are extensive old lacerations, or some type of repair is necessary, a wide conization or partial or even complete amputation of the cervix should be done, to remove the site of infection and thus relieve the symptom of pain.

Summary

Conditions requiring surgical treatment may be the sole problem in relieving dyspareunia, but it is pointed out that such conditions should not be overlooked in the patient who appears to present only a marked emotionally disturbed problem.

Conditions causing dyspareunia and requiring surgical treatment have been presented generally as those of congenital and those of acquired origin.

It has been pointed out that the gynaecological surgeon should always be conscious of the fact that his technique of operation, either vaginal or abdomino-pelvic, may produce this undesirable symptom.

ANTIMALARIALS IN TREATMENT OF SJÖGREN'S SYNDROME

BY

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There is considerable evidence that Sjögren's syndrome is a form of systemic lupus erythematosus (Heaton, 1959). The therapeutic effect of antimalarials on systemic lupus and cutaneous lupus erythematosus is well known (Page, 1951 ; Prakken and Molhuysen-van der Walle, 1954), and it has been noted that these drugs relieve photophobia in patients with systemic L.E. (Hill, 1957). It was therefore thought worth while to try the effect of the drugs on patients with Sjögren's syndrome.

Methods and Results

25 patients with Sjögren's syndrome were treated with antimalarials. Two drugs were used: chloroquine sulphate and hydroxychloroquine sulphate ("plaquenil"). As more hydroxychloroquine became available most of the patients on chloroquine were changed over to it as it is reputed to be less toxic. Every patient had been treated before by orthodox methods, often for many years, and usually with only slight benefit.

The results are summarized in the Table. It is not easy to assess the improvement in patients with Sjögren's syndrome but an attempt has been made by classifying the results as "no change," "improved," and "greatly improved."

Dosage.—The dosage of chloroquine used was 300 mg. daily for three weeks, then 150 mg. daily; this is the dose usually recommended for cutaneous L.E. The dosage of hydroxychloroquine was 800 mg. daily, and this was reduced to a maintenance dose of 400 mg. daily after 8 to 12 weeks if the patient's symptoms had improved. Much larger doses of hydroxychloroquine (up to 2,000 mg. daily) have been used with safety in cutaneous L.E. to get full therapeutic benefit from the drug (Goode, 1958). Possibly more patients with Sjögren's syndrome would have improved if larger doses had been used. It is not known for how long it is necessary to continue treatment; in four cases the drug was stopped and the eyes became worse within a month, while in one case the eyes have remained in a satisfactory state for three months after stopping treatment.

Effects of Treatment

Eight patients failed to improve on antimalarials. Three of these had toxic effects which necessitated stopping the drug before it could be effective and three had had radiotherapy to their eyes in an attempt to relieve their symptoms. This may have been a factor in their failure to improve, as no other patient had previously had radiotherapy.

It took four to eight weeks of treatment before any improvement was noticed; this is similar to the findings in the treatment of cutaneous L.E. and rheumatoid arthritis with antimalarials. The ocular irritation improved first and then the photophobia. In those patients who were not "greatly improved" it was usually a little photophobia that remained. Many patients said that their eyes felt moister, but no change in Schirmer's test was noted; this, however, is a rather crude test.