POUCH OF DOUGLAS HERNIA AND ENTEROCELE

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When the hernial sac contains loops of bowel, a herniation of the pouch of Douglas into the upper posterior wall of the vagina is known as an enterocele. It is generally accepted that this is a true hernia of the peritoneal pouch, although Meigs[15] stated that the actual hernia is anterior to the pouch. Malpas[14] maintained that it is a direct sliding hernia caused by failure of support by the levatores ani muscles. In addition to its receiving relatively scant attention in many text-books of gynaecology,[8,13,17,27] there is usually no reference to the mode of presentation of an enterocele or to the methods of diagnosis. As a result it is thought to occur infrequently. Certainly it is not common as the only abnormal finding in cases of utero-vaginal prolapse, but in association with the other signs of prolapse it is often present. Bueermann, in 1932, was able to find only 86 recorded cases. He stated that the lesion was first described as a clinical entity by Garengot in 1736 (quoted by Weed and Tyrone[26]). The defect is first diagnosed in many patients following an abdominal or vaginal operation.[2,7,14,18,22,27] Mistakenly, such a finding is labelled as a recurrence, but in reality it is a failure to recognize, and therefore a failure to treat, the primary enterocele. It is important to understand that vaginal hysterectomy *per se* will not reduce the sac or strengthen the defects leading to a pouch of Douglas hernia.

The relevant literature abounds with statements such as the following: 'The real importance of primary vault prolapse derives from the ease by which it may remain unrecognized and mar the result of an otherwise successful vaginal repair' — Malpas.[14] Failure to effect a complete repair in cases of utero-vaginal prolapse is often 'an omission to recognize and treat an enterocele' — Jeffcoate.[7] 'It (enterocele) is sometimes seen after an operation for prolapse because the condition, although present at the time of the prolapse, has not been recognized and stands out after the prolapse of the uterus and vaginal walls has been cured' — Baird.[2] 'Many cases are the persistence of an unrecognized enterocele' — Waters.[24] 'This herniation is troublesome as it is so often not diagnosed.' 'The patient may undergo the operation for prolapse but is not cured of her symptoms' — Louw.[11] 'Failure to appreciate the significance of enterocele as a component of prolapse of the uterus, cervical stump or vaginal vault has led to repeated operations' — Weed and Tyrone.[26] 'Greater familiarity with the condition leads to increased diagnosis and repairs' — Austin and Damstra.[1] 'Frequently overlooked in its early development' — McCall.[12] 'This lesion must be suspected before and looked for at vaginal examination as it can be easily missed' — Meigs.[15] 'Hernia may follow vaginal hysterectomy for repair of prolapse if it is not obliterated by approximating the utero-sacral ligaments' — Pfaneuf.[19] 'One cannot overstress the importance of the association of hernia of the pouch of Douglas with uterine-vaginal descent and too often a small enterocele is unnoticed during a repair operation.' 'The so-called postoperative "recurrent" enterocele which in the vast majority of cases is not recurrent but in fact is a "neglected" enterocele' — Read.[20] 'By far the most commonly neglected step in vaginal plastic procedure is reconstruction of the upper posterior vagina... This accounts for large numbers of so-called recurrences' — Harrison and McDonagh.[4]

It is noteworthy that the above statements were made by some of the leading men of gynaecology in many countries. These were not the obscure writings of unknowns with axes to grind. It is paradoxical, therefore, that the enterocele should so often be neglected both diagnostically and therapeutically.

THE PRESENT STUDY

Since little was commonly known about the presenting symptoms and signs of enterocele, we decided to assess whether a symptom specific to enterocele existed. At the same time the various diagnostic manoeuvres described for detecting the signs of an enterocele were evaluated.

All patients admitted to the professorial gynaecological wards of the Groote Schuur Hospital with a diagnosis of utero-vaginal prolapse over a period of three months were carefully questioned and examined by one or both of us. A detailed history was obtained about the onset and nature of symptoms and particular note was taken of whether the symptoms were always present, and whether they were affected by the acts of defaecation and micturition. The patient was examined and in each case we attempted to make a definite pre-operative diagnosis of enterocele. Finally the operative findings were correlated with the symptoms, signs and pre-operative diagnosis.

THE RESULTS

Incidence

During the three-month period of this study, 41 out of a total of 818 patients were admitted with a diagnosis of utero-vaginal prolapse. Of these, 19 were found to have an enterocele at operation. A definite pre-operative diagnosis was made in all cases. In no patient was the defect diagnosed pre-operatively and then not detected during the subsequent surgical procedure.

A pouch of Douglas hernia was thus the primary lesion

or an associated finding in 46% of patients diagnosed as having utero-vaginal prolapse. The incidence among all gynaecological admissions was 2·3%. Since two-thirds of the total patients were admitted to the wards for non-White patients, and since 12 of the 19 enteroceles were in White patients, it is obvious that enterocele is more prevalent in the White than in the non-White races. The incidence parallels the incidence of prolapse in the two groups.

Age

The average age of these patients was 54·7 years. The youngest patient was 32 years and the oldest 79 years old. Kinzel,[9] in a series of 265 cases, found the majority of the patients to be aged 50 - 70 years with the youngest aged 26. Weed and Tyrone,[26] in an analysis of cases at two separate hospitals, found the average ages to be 56·2 and 56·5 years respectively. Read,[20] in 167 cases, found the average age to be 57 years.

Enteroceele is a disease of senescence. It has been emphasized that the diagnosis is often missed initially. In our small series 7 out of 19 patients had had a previous operation for similar symptoms. Kinzel[9] noted that 142 of 265 patients had had a previous pelvic operation, Weed and Tyrone[26] 37 out of 52, Read[20] 89 out of 167, and Austin and Damstra[1] 43 out of 73. Israel[6] stated that there is a 4·1% incidence following vaginal hysterectomy. Therefore it seems probable that the true age for the presentation is about five years earlier than it is usually diagnosed, i.e. at about the time of the climacteric.

Parity

The parity of the patients in the present study is shown in Table I.

TABLE I. PARITY OF PATIENTS PRESENTING WITH AN ENTEROCELE

*Parity**	*Number of patients*
0	1
1	5
2	3
3	2
4	1
5	1
6	1
7	1
8	2
9	–
10+	2

* The mean parity was 4.

In those patients with utero-vaginal prolapse without enterocele, the mean parity was 5·4.

On the surface it would appear that increasing parity is a factor in the production of the lesion. In all probability this is not so — the stresses and strains of an individual labour count for more than the cumulative effects of a succession of easy spontaneous vaginal deliveries, particularly in those patients who have a weakness of the pelvic supporting tissues.

The condition is rare in nulliparae. Read[20] had only 16 nulliparae in 167 patients, Weed and Tyrone[26] 2 in 52, Austin and Damstra[1] 1 in 73 and Kinzel[9] 6% in 265. In our series there was 1 nullipara. These figures support the contention that a congenital herniation of the pouch of Douglas is rare. We have observed, since undertaking routine cytology on all pregnant women, that the cervix can be difficult to visualize because of a large fold of posterior vaginal wall which intrudes in front of the cervix. The increased length and laxity of the vagina in pregnancy has precluded a definite diagnosis of enterocele being made by conventional diagnostic methods in such cases. These patients are at present under investigation. Although no definite conclusions have been made, it is possible that pregnancy itself may predispose to the formation of a pouch of Douglas hernia.

SYMPTOMS, SIGNS AND DIAGNOSIS

Symptoms

Including 4 patients in the present series and some others operated on during the past two years, we were able to collect 7 patients in whom the enterocele was the only abnormal finding. The symptom common to all these patients was 'a feeling of heaviness or of something coming down in the front passage'. The symptom is most severe after straining, prolonged activity and long periods of standing. It is relieved when the patient lies down. Straining during the acts of micturition and defaecation causes this feeling. (We had thought that the passage of faeces down the rectum would obliterate the pouch of Douglas, so that the symptom would be absent during defaecation, but this was not so.) We agree with Read[20] that the lesion, if present after an operation, causes 'symptoms as troublesome as those of the pre-existing prolapse'.

Lombard,[10] in a follow-up of a large number of patients who had been operated on for utero-vaginal prolapse, has noted many entirely asymptomatic enteroceles. Among those patients in whom the defect was only part of a more generalized utero-vaginal prolapse, the symptom of 'heaviness or something coming down' was present in all except 3 patients. In patients with utero-vaginal prolapse without enterocele, the same symptom was present in all except 8.

Pain in the lower abdomen was slightly more common in patients with the lesion than in those without. The incidence of low backache, however, was higher in patients without enterocele. Neither of these differences was statistically significant. In all the patients studied, only 5 complained of a continuous low backache. All these patients had an enterocele. The two groups showed no differences in the frequency of urinary and bowel symptoms, and where these symptoms occurred, a cystocele and rectocele were usually present.

The relevant literature contains very little about the symptoms of enterocele. Louw[11] described the symptoms as being those of pelvic pressure, i.e. backache and an awkward bearing-down sensation, together with a feeling of a lack of support and insecurity. Weed and Tyrone[26] stated that, where enterocele is associated with other forms of utero-vaginal prolapse, the symptoms are 'a bearing-down or dragging sensation', 'a sensation of

pressure in the vagina', 'organs falling out' or 'something protruding'. In 29 patients with only an enterocele, they found that most symptoms were referable to the rectum, e.g. fullness in the rectum, inability to defaecate, faecal impaction and a feeling of incomplete emptying of the bowel. Kinzel,[9] however, found that rectal symptoms were present in only 20% of 265 cases. Fletcher Shaw[21] noted that where the defect followed a Manchester operation, the presenting symptom was 'something coming down'.

Duration of Symptoms

In the present study the average duration of symptoms in the patients with enterocele was 3 years 1 month, with only 5 patients having symptoms for more than 1 year.* Kinzel[9] noted that the great majority of patients in his large series had had symptoms for less than 1 year. Our analysis of the symptoms based on a small prospective study leads us to conclude, as did Kinzel,[9] that since there is no specific symptom suggestive of enterocele, it should be thought of and specifically looked for in every case of utero-vaginal prolapse. A constant awareness is an essential to the pre-operative diagnosis.

Signs and Diagnosis

The classic sign is a bulging forwards and outwards of the upper posterior vaginal wall. Since the enterocele is very often closely associated with a rectocele at a lower level, there appears to the examiner to be only one defect of the posterior vaginal wall. Such a defect is then called a large rectocele and treated as such. It is important, therefore, to visualize clearly the anatomical relationship between enterocele and rectocele. The enterocele lies anterior to the rectum. It enlarges by 'burrowing' outwards between the rectum and vagina. All diagnostic methods revolve around the accurate assessment of the limits of the rectum and any defect thereof. If, with the rectum defined, there is still a defect of the posterior vaginal wall anterior to the rectum, such a lesion can with certainty be diagnosed as an enterocele. The enterocele by definition contains bowel, and therefore like other herniations of the abdominal wall containing bowel, it will have an impulse on coughing.

The methods we employed to diagnose enterocele were:

1. *Speculum examination* which reveals a bulging forwards and outwards of the posterior vaginal fornix or of the vaginal vault where a hysterectomy had previously been performed.

2. Testing for a *cough impulse* in this bulging area with the bladder empty and the rectum defined.

3. A *combined rectal and vaginal examination* done in such a manner that the anterior rectal wall is isolated between the examining fingers. The patient is asked to strain, and an enterocele, if present, will protrude forwards and outwards over the vaginal examining finger. During this manoeuvre an assessment is also made of the cough impulse.

* The duration of symptoms in each of these 5 patients was 3, 11, 12, 12 and 19 years respectively, thus accounting for the rather long average duration of symptoms.

Without some form of rectal examination, enterocele cannot be diagnosed with certainty, yet Baird,[2] among others, stated that inspection and vaginal examination is sufficient to establish a diagnosis in cases of utero-vaginal prolapse.

In the present study we have found that the above techniques give satisfactory and accurate assessments of the component defects in cases of prolapse. Because of the difficulties encountered in diagnosing pouch of Douglas hernia, various additions and refinements to the above methods have been devised. Waters[25] advocated that a bivalve speculum be inserted into the vagina with the posterior blade high up in the posterior fornix. The cervix is exposed. The index finger is placed in the rectum up to the level of the cervix. The speculum is gradually withdrawn while in the open position. If the posterior vaginal wall forms a sacculation over the tip of the blade and the rectal wall at the same time falls away from the examining finger, it suggests the presence of a rectocele. If, however, the rectal wall remains adjacent to the finger, an enterocele is diagnosed. Waters maintained that this method ensures a positive pre-operative diagnosis in every case. Torpin[23] stated that in post-hysterectomy patients a bulging mass between the tips of a bivalve speculum is diagnostic. Jeffcoate[7] stressed the need for a rectal examination, but also mentioned a diagnostic test using volsella. A volsellum is attached to the posterior lip of the cervix and another to the vaginal epithelium of the posterior fornix. If with gentle traction the posterior fornix descends to a lower level than the cervix, an enterocele is present. Malpas[14] recommended the volsellum test in cases of doubt. James Young[27] stated that a rectal examination with the patient bearing down is a necessary diagnostic procedure. Kinzel[9] stressed the need for the manoeuvres previously stated, but emphasized that the patient should be upright during the examination; a point also made by Read,[20] Meigs,[15] and Louw.[11]

Jeffcoate,[7] Kinzel,[9] Read[20] and Campbell[3] all agreed that diagnostic methods are not entirely conclusive and that these methods cannot exclude enterocele either. These authors recommended, therefore, that the pouch of Douglas be opened and explored in *all* patients at the time of a pelvic floor repair operation. During the course of a vaginal hysterectomy the peritoneal pouch is automatically opened. Mistakenly, it is believed by some gynaecologists that this in itself is sufficient to cure an enterocele. That this is not so is well documented by the many 'recurrences' reported after such operations. It is essential that the limits of the pouch of Douglas are carefully ascertained by digital exploration and, if beyond the normal, that a full repair of the enterocele is made. Read[20] stated the position very definitely: 'The vaginal hysterectomy is not the important factor in the cure of prolapse — it should be merely an incident in the course of a careful repair'.

The following appear to be the essential basic steps in the diagnosis of enterocele in patients with utero-vaginal prolapse:

1. A detailed history. A careful evaluation is made of each symptom in relation to its severity with stand-

ing, effort and rest. Any alteration in character before and after the acts of micturition and defaecation must be noted.

2. A careful pelvic examination, including a combined recto-vaginal examination with the patient at rest and while straining. The upright position is favoured by many.

3. An exploration of the limits of the pouch of Douglas from within the peritoneal cavity is necessary during every operation performed for utero-vaginal prolapse.

4. A patient with utero-vaginal prolapse should be operated on by a surgeon who is familiar with (*a*) the methods used for opening the pouch of Douglas, and (*b*) the methods employed in the repair of an enterocele.

TREATMENT

Detailed descriptions of operations for repair of enterocele have been written by Parsons and Ulfelder,[18] Hiller,[5] Waters,[24] Read,[20] McCall,[12] Harrison and McDonagh[4] and Meigs.[15]

The principles of the surgical repair are:

1. Isolation of the hernial sac.

2. Excision of the hernial sac.

3. Closure of the defect by approximation of the utero-sacral ligaments. Since these ligaments are often attenuated in prolapse, they may receive additional support anteriorly by approximation to the transverse cervical ligaments and posteriorly by approximation to the innermost border of the levatores ani muscles. It is important to realize that the ureters run in close proximity to the utero-sacral ligaments. Deep blind insertion of the sutures may incorporate or traumatize them.

Where a large enterocele is present it is difficult to achieve a satisfactory closure and repair without causing narrowing of the upper part of the vagina. For this reason and where the technical difficulties of a vaginal approach are considerable, an abdominal approach is favoured by some. The principles of the abdominal operation follow closely Moschcowitz's[16] description.

CONCLUSION AND SUMMARY

In a prospective study it was found that enterocele occurs much more frequently in cases of utero-vaginal prolapse than is generally believed. An undetected enterocele is often the cause of failure in repair operations.

There is no symptom specific to enterocele, therefore the diagnosis depends on an awareness of the condition and on a diligent examination to look for the condition. Since pre-operative diagnosis is not infallible, it is necessary to open and assess the extent of the pouch of Douglas at operation in all patients undergoing a repair of utero-vaginal prolapse.

The principles of the repair of a pouch of Douglas hernia are outlined.

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