SIMPLE EXPLANATIONS AND THE GROSSER VARIATIONS OF PROLAPSE

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Taking life generally, it is an unfortunate truism that it is easier to destroy than to build. Constructive ability is one of the hallmarks of character. In medicine, when surgery is required, destruction may be necessary to cure the organism of disease by removing an afflicted organ. This total or partial removal of anatomical structures is balanced by the hope that not only will disease be cured, but health will be restored or improved. This type of operation, generally speaking, should be undertaken shortly after diagnosis. On the other hand, constructive or reparative surgery may be done in a more leisurely fashion. A good result is most gratifying, since the symptoms produced by anatomical variations and aberrations are not only increasing physically but they also gradually become magnified psychically. How true this statement is for *prolapse*, which may be defined as a *herniation of the urethra, bladder, uterus, pouch of Douglas and/or rectum — or any one of these organs singly or in combination — into, or together with, the vagina.*

It is well known that the symptoms of prolapse vary from the anatomical variety of frequency, stress incontinence, inability to void urine unless the bulge is pushed back, feeling of 'something coming down', lower abdominal (bilateral iliac fossa) drag, backache and inability to complete the act of defaecation or start it efficiently, to the psychological symptoms of tiredness and irritability. Many and varied explanations are given for these symptoms. One often wonders whether they might not just simply be explained along the following lines:

If the urethra is stimulated by any irritant (including the presence of urine), the urge to micturate is experienced. Therefore, if there is a slackening of the internal urethral sphincter (or, for the purists, a weakness at the junction of the bladder and urethra), urine readily escapes from the bladder into the urethra, resulting in *frequency* (Figs. 1 and 2).

A slackening of the internal sphincter (Fig. 3A), as well as a weakness of the voluntary muscular mechanism of the urethra and the external sphincter (Fig. 3B), must inevitably lead to an 'inability to hold the water' once intra-abdominal pressure is raised. Jeffcoate and Roberts,[5] Hodgkinson,[6] and innumerable other authors (3rd World Congress[17]) have done much work to demonstrate bladder-neck deficiency in association with the symptom of *stress incontinence*. Clinically, an antero-posterior weakness (Fig. 3) only may be found. At times, however, a slight deficiency of this nature exists in addition to a marked bilateral expansion of that region, so that the bladder 'flows' into the urethra without any clear or, at worst, without even an imaginary line of division between these organs. It is as if the bladder and urethra together may now be likened to a funnel with its neck sawn off (Figs. 4 and 5). This urethro-bladder expansion may therefore be present antero-posteriorly or bilaterally or in a combined fashion, i.e. a thin atrophic-walled urethra, expanded in all directions, exists. Therefore, when operating on a patient suffering from stress incontinence, the postero-lateral aspects of the bladder as well as the posterior and lateral walls of the urethra should be clearly dissected and defined. It is of no value lifting the bladder neck anteriorly only. The bladder neck should be reconstituted properly, that is, the whole urethra should be given a 'face lift'; the repair should involve the sides as well (Fig. 5). In point of fact, this is exactly what happens to the bladder-neck region if the proper applications of the different sling operations are done.[1,12] Whether approximation of the fine and small muscles surrounding the urethra will be adequate to restore function, depends upon whether their nerve and blood supplies have not been irretrievably damaged — as a result of labour, lesions of the nervous system, or previous operations. Once damaged, muscular deterioration seems to be aggravated further by oestrogen depletion, as is shown by the fact that symptoms often become manifest or are aggravated at the time of the menopause. *At all times it must be remembered that 'stress' or 'sphincter' incontinence is a symptom. It cannot be over-emphasized that thorough evaluation of this symptom before the institution of the appropriate treatment is essential.* The analysis of results obtained is extremely difficult and may often be misleading. Subjective, as opposed to objective, phenomena cannot be analysed accurately.

The 'something coming down' is usually the bladder (Fig. 3C), but it may be the cervix and uterus or the rectum (Fig. 3D) or any of these structures in any combination. If the cystocele is large, urine will find that pouch an easier escape route (Fig. 6B) than following its normal channel — the urethra (Fig. 6A). The patient volunteers that she is unable to void urine without *'thumbing back' the lump* protruding through the vagina. *Bilateral iliac-fossa discomfort, drag and backache* may be due to the ever-descending uterus, often becoming retroverted, dragging the infundibulo-pelvic ligaments, and spreading tension to the vessels and nerves distributed in those regions as it gradually extends along its ever-sagging path. The utero-sacral ligaments (Fig. 7A) harbour the rich network of a nervous plexus. Any drag in this region may be considered the cause of backache and lower abdominal discomfort. In doing the Wertheim type of operation it is invariably clearly demonstrated that the utero-sacral ligament extends along the sides of the vagina, attaching that organ to the postero-lateral walls of the pelvis (Fig. 8). It is as if the vagina is but a potential tube in a three-quarter circular structure running from pelvic wall to pelvic wall and extending from the vulva to the cervix. In so doing it covers the anterior and lateral aspects of the rectum.

Damage to the rectum itself, the perirectal tissues and/or the sphincter, or the nerve supply to these structures, is responsible for the appearance of a rectum ballooning into the vagina (Fig. 9). This is usually found in association with a difficulty in initiating the act of defaecation. The *inability to 'nip-off'* the motion is due to varying degrees of sphincteric damage. Associated with most of

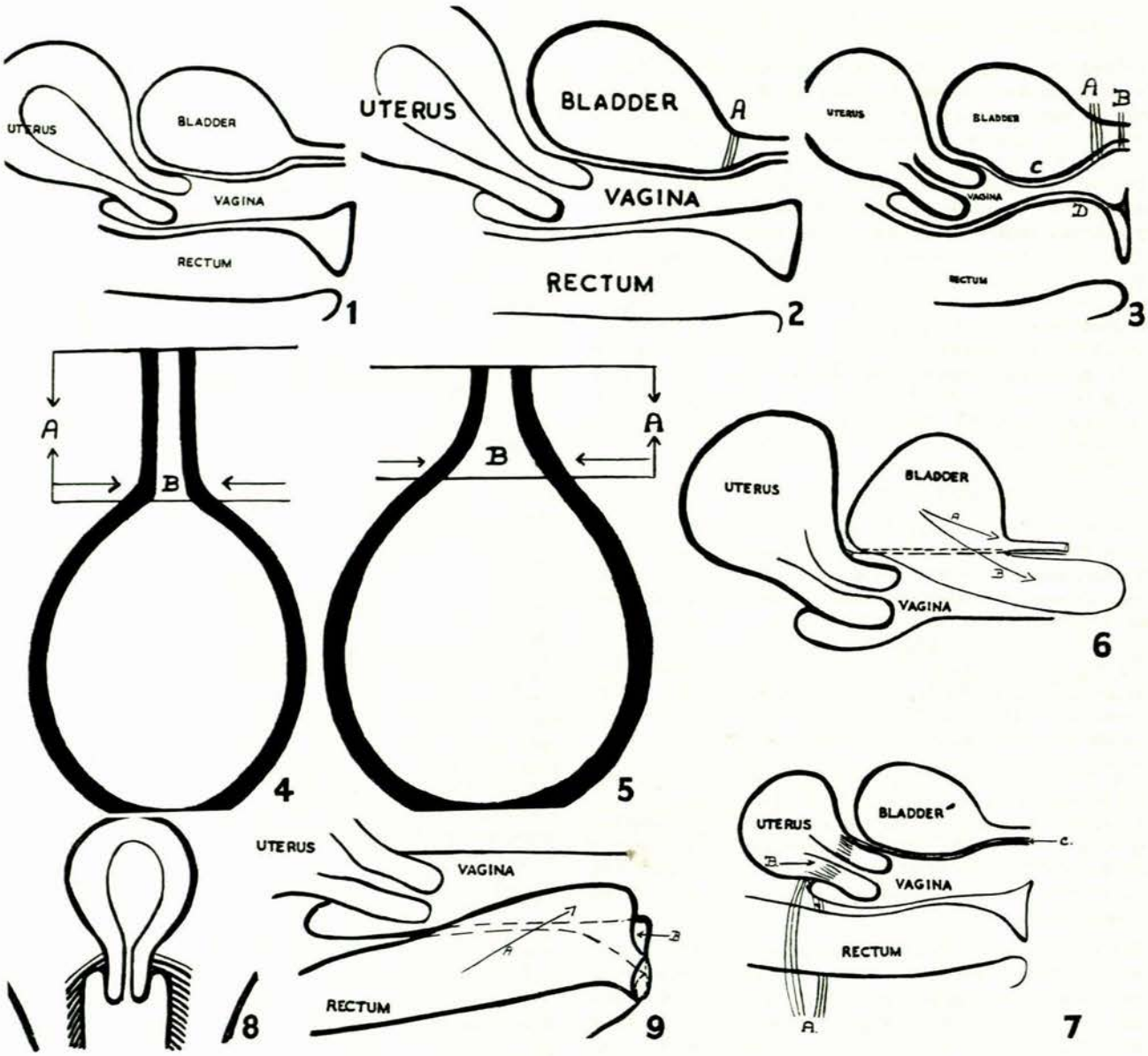


Fig. 1. Diagrammatic presentation of a cross-section of the female pelvis.

Fig. 2. A = weakening of the 'internal urethral sphincter', allowing ready escape of urine from bladder to urethra.

Fig. 3. A = slackened internal urethral sphincter; B = weakened external or voluntary sphincter; C = cystocele; D = rectocele.

Fig. 4. A = normal length of urethra; B = normal diameter.

Fig. 5. Bilateral urethro-bladder expansion involving B and A.

Fig. 6. B = large cystocele which provides an easier escape route for urine than A = the urethra. B has to be 'thumbed back' before urine can be voided.

Fig. 7. A = utero-sacral ligaments; B = lateral cervical ligaments (fascia surrounding vessels and 'flowing' into the utero-sacrals).

Fig. 8. The utero-sacral ligaments extend from the cervix down the postero-lateral aspects of the vagina and together with the latter organ form more than a semicircle around the rectum.

Fig. 9. Large rectocele. A = direction of motion. Thus this lump has to be pushed and held back before satisfactory bowel action can be commenced, continued and completed.

these lesions is a weakening of the levator ani muscles — owing to the stretching produced during labour either causing permanent damage to a number of muscle fibres, or damage to the blood or nerve supply.

Craig and Burger[3] and Krige[10] have stressed that at all times, especially if there is a feeling of 'foundation instability' (the sensation of '*something giving way*' in the pelvis — in turn responsible for varying degrees of discomfort), *enterocele* must be ruled out both clinically and at the time of the operation, or else this relatively commonly associated condition will be missed and the patient not be cured by the usual repair operation.

TREATMENT

The treatment of prolapse may be summarized as follows:

1. Preventive

(*a*) Regular exercises involving the use of perineal muscles.

(*b*) Antenatal and postnatal exercises, with the emphasis on strengthening the levator ani muscles.

(*c*) Good intranatal care with proper approximation of the levators in case stitches are required for tears or episiotomies.

2. Curative

A. Operative

(*a*) Colpo-perineorrhaphy by itself or including cervical amputation or vaginal hysterectomy.

(*b*) Vaginal closure — le Fort or colpocleisis.

B. Non-operative

(*a*) The insertion of a pessary, as a temporary measure or in patients who are poor operative risks, is a valuable but, fortunately, seldom required form of treatment. Foreign bodies, despite good care, invariably promote further trouble.

(*b*) Kegel's perineometer[9] for stimulating levator exercises is said to have a place in the management of stress incontinence.

That the removal of the uterus through the vagina is becoming an increasingly popular adjunct in the treatment of prolapse[4-10] is readily observed when conservative (Cape Town) figures are analysed by means of graphs. Graph 1 (Fig. 10) depicts the number of patients suffering from prolapse operated upon annually (1955 - 1961) in the Groote Schuur Hospital. A study of the following

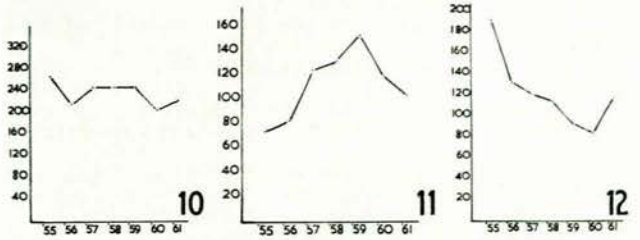


Fig. 10. Graph 1. Operations for prolapse, Groote Schuur Hospital.
Fig. 11. Graph 2. Vaginal hysterectomies, Groote Schuur Hospital.
Fig. 12. Graph 3. Colporrhaphies, Groote Schuur Hospital.

two graphs (Figs. 11 and 12) demonstrates the increased incidence in vaginal hysterectomy as opposed to colpo-perineorrhaphy alone or in conjunction with cervical amputation. The technique employed is based on that evolved by Stallworthy[16] and that so ably reported by Hawksworth and Roux.[4]

Everyone, however, has had the experience of seeing patients who do not conform to the usual variations. These serve to exercise the mind. Tricks of ingenuity have to be tried in order to restore these individuals and their organs to as near normal function and position as possible. In order to illustrate these problems, pertinent points from a few case histories will be used.

Prolapse in pregnancy, fortunately, is not very commonly found. This finding in a 24-year-old patient is demonstrated in Fig 16. She was 28 weeks pregnant. Bed rest and insertion of the prolapse into the vagina tided her over to term, when she gave birth to her baby normally. A Manchester repair was done 5 months later with satisfactory results. In pregnancy, prolapse requires careful assessment and treatment, varying from the conservative approach to interruption of early pregnancy; Dührssen's incisions of the thickened, fibrous and oedematous cervix in labour; or Caesarean section at or near term. These, in due course, may be followed by the assessed reparative operation.

Acute *prolapse in the puerperium* is an uncommon occurrence. Examination readily produces the diagnosis. A 28-year-old patient stated that her 'womb had dropped out' following the delivery of the placenta (Fig. 17). The diagnosis was 'inversion of the uterus'. On closer scrutiny, however, the truth revealed itself, viz. that this was the cervix protruding through the vagina. It was replaced and produced no further trouble.

These 2 cases of mine were previously reported by Claassens.[2]

If *a young woman desirous of more children* is suffering from prolapse and an operation is deemed necessary, as much of the cervix as possible should be conserved since gross amputation might well lead to repeated abortions. The removal of a cuff of supracervical vaginal mucous membrane, described by Hunter,[7] is a most useful aid to the gynaecological surgeon's armamentarium. In a patient who has had a high amputation of the cervix and who has aborted since that time, the operation first described by Shirodkar[15] has been found to be effective. Hunter's[7] method of removing an anterior wedge of a patulous cervix while doing the Manchester type of operation should be undertaken if the conservation of the uterus is imperative.

The emphasis of the prolapse may rest upon the rectocele. At times these aberrations ascend to near the pouch of Douglas or may even include that cul-de-sac. However, in the absence of enterocele, a large rectocele may be repaired adequately by dissecting the complete posterior vaginal wall off the rectum, followed by stitching the perirectal fascia and approximating the levator ani muscles. If the perirectal fascia is of inferior quality, further support may be necessary. This may be obtained by incising the levator fascia, stripping it on either side and then approximating the caudal ends, followed by uniting these muscles by using interrupted stitches. This technique was evolved, described and illustrated by Wilfred Shaw.[14]

Enterocele, as demonstrated by Craig and Burger,[3] is a condition more commonly present than usually diagnosed. That the cul-de-sac extends to the perineal body, as stated by Read,[13] can be demonstrated in female embryos. On inserting a finger into the pouch of Douglas of a little foetus (Fig. 18), that structure opens right up to the perineal body. For photographic purposes the pouch of Douglas and this opening were filled with plaster of Paris (stained slightly pink), cottonwool was placed in the vagina, and the rectum was meconium stained. There may well

be factors apart from this embryological background that may be responsible for this pathological entity. Careful enquiry and examination elicits the diagnosis in most cases. An important additional method of assessing pelvic pathology is by placing the index and middle fingers simultaneously into the vagina and the rectum respectively

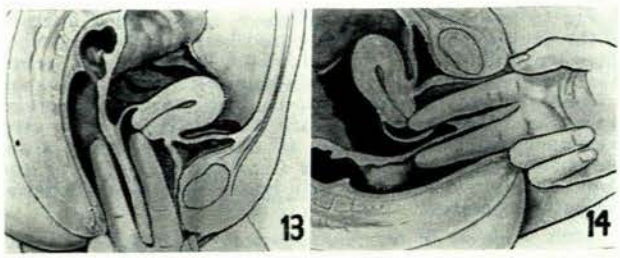


Fig. 13. Index finger in vagina. Middle finger in rectum.
Fig. 14. On straining a bulge may be felt between the fingers.

(Fig. 13). On bearing down the enterocele may be felt between these two digits (Fig. 14). If any doubt about the diagnosis exists, the pouch of Douglas should be opened and examined during the reparative operation, which should then consist of excising the sac and approximating the utero-sacral ligaments.[11,13]

The following cases, which are in fact caricatures, are reported because they enable us to illustrate a number of points clearly.

1. Large Enterocele plus Rectocele

Mrs. A.G., a postmenopausal patient, complained of 'something protruding through the vagina.' Fig. 19 shows what was found. Gut was palpated in the large sac below the cervix. A vaginal hysterectomy, together with removal of the peritoneal sac (Fig. 20) and redundant posterior vaginal mucous membrane, was done. This was followed by approximation of the utero-sacral ligaments, further obliteration of the sac, as well as repair of the perirectal fascia and suturing of the levator fascia and muscles. Her recovery was uneventful and her subsequent health highly satisfactory.

2. Procidentia with Massive Enterocele

Mrs. O., a 77-year-old, long-retired nursing sister, was bedridden and convinced that she was suffering from cancer. On examination a tremendous prolapse with large ulcers spread over the vaginal walls, was found. Following cleaning-up procedures and oestrogen administration, the picture presented as shown in Fig. 21. A barium meal showed most of the small intestine well outside the confines of the normal abdominal cavity (Fig. 15). As great difficulty had been encountered in previous cases of slightly less gross dimensions from adhesions in the sac, a near-total vaginectomy with anterior and posterior repair, followed by a le Fort type of stitching raw anterior to posterior vaginal wall remnants, was carried out. Her recovery was uninterrupted. She is enjoying good health in comfort, taking long walks daily.

3. Procidentia plus Prolapse of the Rectum

A 34-year-old mentally retarded patient presented with these findings (Fig. 22). Following the vaginal hysterectomy it was immediately evident that the pouch of Douglas lay athwart the perineal body (Fig. 23). This finding bears out the premise that enterocele may well be congenital in origin and that the cul-de-sac does in fact extend to the perineal body. The vaginal repair was completed following the operation of recto-sigmoidectomy. Great care was taken to obliterate the peritoneal sac posteriorly. The patient made a rapid recovery and, despite a number of letters, has not been seen or heard of since leaving hospital.

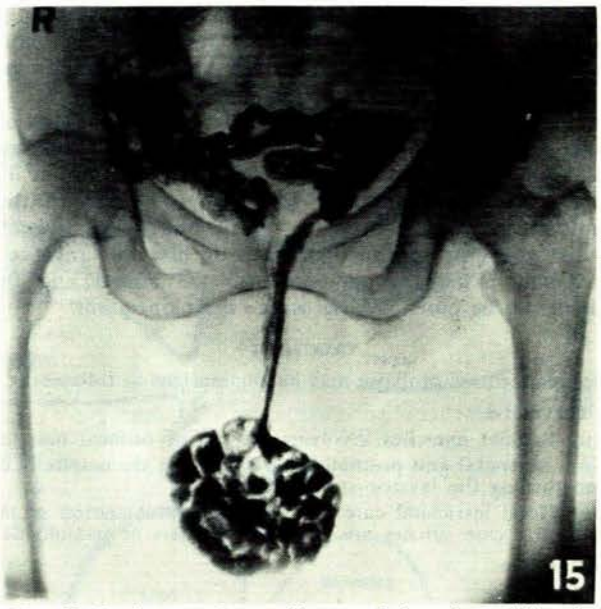


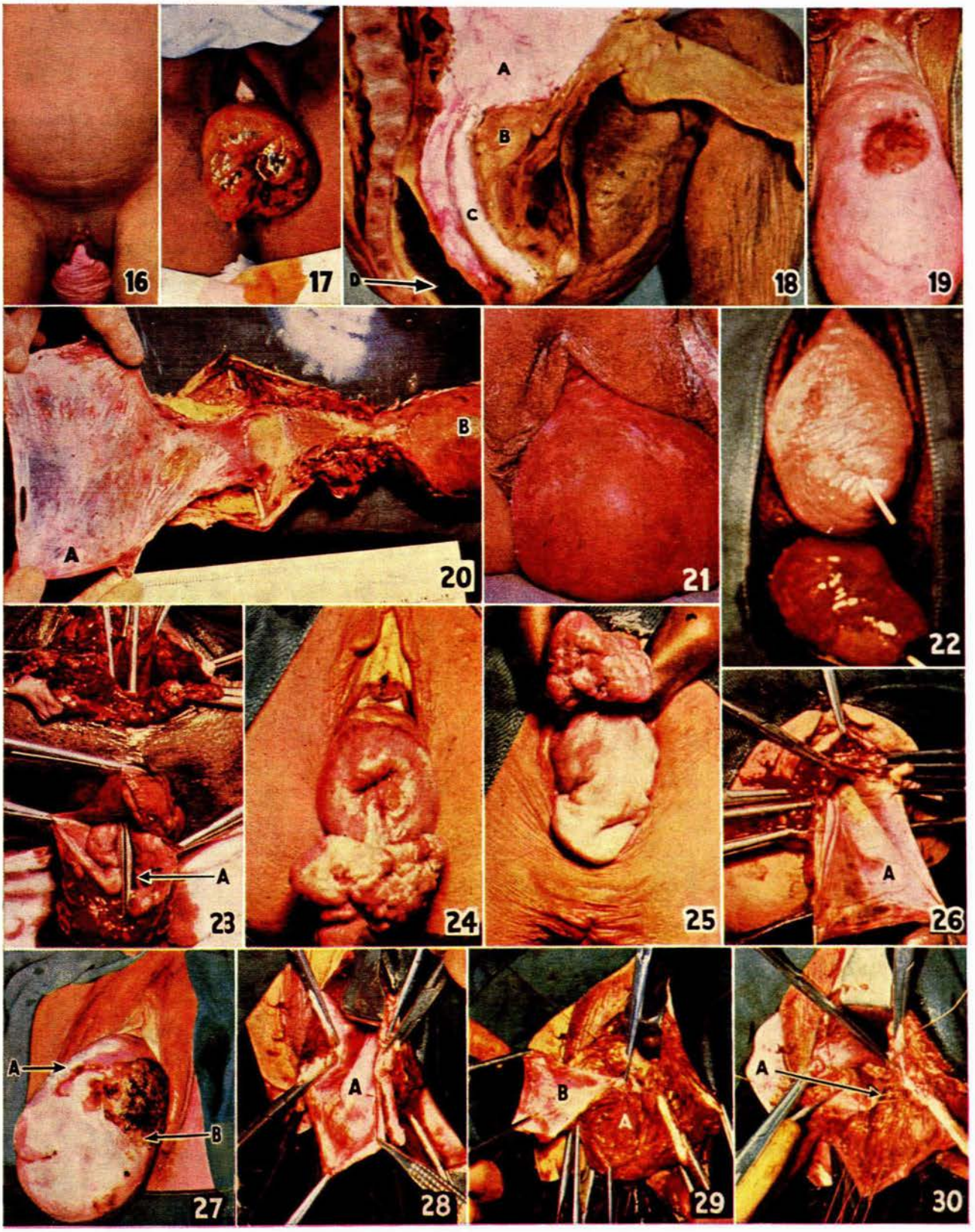
Fig. 15. Barium meal revealing small intestine within the enterocele well outside the confines of the normal abdominal cavity boundaries.

4. Procidentia, together with Cervical Cancer

Mrs. R., aged 93 years, complained of major perineal discomfort. What brought her to hospital was the fact that her discharge had become bloodstained. Figs. 24 and 25 demonstrate the pathology. Because of her age, a wide cuff of vagina was removed while doing the vaginal hysterectomy. The peritoneal sac was excised (Fig. 26) and the usual repair done. It was deemed correct to give her comfort during the remaining years of life and not to treat the cancer radically. This indeed was achieved. She lived for 2 more years and died of natural causes without recurrence of either cancer or prolapse.

Hesselberg[5] has re-emphasized that cervical cancer is rarely associated with major degrees of prolapse. The reason for this rare occurrence might well be that no pooling of discharge can

Fig. 16. Prolapse in pregnancy.
Fig. 17. Acute prolapse with cervical extrusion immediately after delivery.
Fig. 18. Cross-section of pelvis of female foetus. A = pink-stained plaster of Paris in pouch of Douglas demonstrating the opening extending to the perineal body; B = bladder; C = cottonwool in the vagina; D = meconium-stained rectum.
Fig. 19. Large enterocele.
Fig. 20. Postoperative specimen (see Fig. 19). A = peritoneal sac; B = uterus.
Fig. 21. 'Tremendous' prolapse.
Fig. 22. Procidentia and prolapse of the rectum.
Fig. 23. A vaginal hysterectomy has just been done. The pouch of Douglas is demonstrated lying athwart the perineal body. A = Spencer-Wells forceps inserted to show this finding.
Fig. 24. Prolapse with cancer of the cervix.
Fig. 25. Posterior aspect (see Fig. 24) shown to demonstrate the enterocele.
Fig. 26. The vaginal hysterectomy has been completed. A = the peritoneal sac to be excised.
Fig. 27. Procidentia plus A = leucoplakia of vagina; B = primary vaginal carcinoma.
Fig. 28. Vaginal hysterectomy has been completed. A = pouch of Douglas.
Fig. 29. (See Fig. 28.) A = area left raw after stripping off peritoneum of pouch of Douglas; B = stripped-off peritoneum.
Fig. 30. A = suturing utero-sacral ligaments before their approximation and thus obliteration of sac.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occur, and thus the epithelial climate remains such as to render the possibility of viral and genetic changes unlikely.

5. Procidentia with Vaginal Cancer

Mrs. du P., aged 74 years, stated that she had had a major prolapse for 40 years. It gradually worsened over the past 20 years. A watery, bloody discharge had been noticed for the past 5 or 6 months. She was a bad diabetic and suffered from angina pectoris. Fig. 27 shows the finding of procidentia with leucoplakia as well as a primary cancer of the vagina. The near-total vaginectomy and vaginal hysterectomy was followed by removal of the peritoneum of the pouch of Douglas (Figs. 28 and 29), approximation of the utero-sacral ligaments (Fig. 30) and adequate stitching of perirectal fascia, approximation of the levator ani anterior repair, and terminal le Fort. Her recovery was hampered by a wound abscess. It is yet too early to report on a long-term result.

In poor operative risks and in patients who are frail from old age, comfort means a great deal. There must be an adequate assessment of all the facts, and well-planned treatment must be instituted. There is no point in curing a disease and killing the patient in the attempt. How these patients can tolerate so much for so long is a constant source of amazement. Many human beings endure great difficulties and accept their lot in life with resignation, provided the onset and progress of their misfortune is at a slow rate. When they themselves take stock of the position, once the end result is seen and appreciated, their astonishment is marked. If they are fortunate enough to have their health restored and to be set on the road to recovery, they are amazed at the discomfort and inconvenience they were previously prepared to suffer. They then continue to improve or gradually slip back into the same old apathy. 'Follow-up' and after-care with continued encouragement is essential for rounding off the treatment.

A great deal of work remains to be done before the whole story of prolapse is unfolded. In all probability there are as many causes as there are symptoms. Treatment must always be directed at the individual after assessing the particular findings in each case.

SUMMARY

1. A few simple explanations of the common symptoms of prolapse have been suggested.

2. Reconstruction of the bladder neck or 'sphincteric region' in patients with stress incontinence with the emphasis on urethral muscular approximation, thus lifting this area anteriorly as well as folding it inwards from the lateral aspects, is advocated.

3. The increasing role of vaginal hysterectomy as part of the repair operation is stressed.

4. A few case histories are given to demonstrate variations in technique employed in order to overcome difficulties produced by major variations and complications found in association with prolapse.

5. As a general rule it can be accepted that prolapse does not kill. Treatment, therefore, is directed towards giving the patient maximum comfort. In patients who are poor operative risks this statement must always be kept in mind.

6. The degree of repair should be such as not to interfere with active sexual life, pregnancy, or childbearing.

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