6. *Acute pneumonia* may show itself by acute abdominal pain in the early stages, and rigidity, and may easily be missed.

7. *Calculi*, renal, ureteric, and vesical, do occur associated with pregnancy, and may cause acute abdominal pain and may need surgical treatment.

8. *Suppurative peritonitis*, pelvic or otherwise, may arise from many causes, as appendicitis, acute cholecystitis, perforation of the pouch of Douglas by an instrument, and rupture of a pelvic abscess, or of a pyosalpinx.

The above are some of the conditions that should be brought to mind in difficult cases of acute abdominal pain in pregnancy.

THE ENLARGED PROSTATE : ITS DIAGNOSIS AND TREATMENT.*

BY

RALPH COYTE, M.B., B.S. LOND., F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE PRINCE OF WALES'S GENERAL
HOSPITAL, TOTTENHAM, ALL SAINTS' HOSPITAL,
AND THE QUEEN'S HOSPITAL FOR CHILDREN.

DIAGNOSIS.

ENLARGEMENTS of the prostate gland may be divided into three groups: (1) benign growth or adenoma; (2) malignant growth; (3) chronic fibrotic change.

The symptoms may be divided into general and local.

Of the local variety, the first is usually an increased frequency of micturition. This at first is slight, and is produced by the irritation due to the presence of the enlarged gland. Later, the frequency becomes more marked and a new factor has now arisen—i.e., an intravesical infection. Whether this infection be carried from without or from the blood stream it is impossible to say, but it is a constant finding that in all cavities of the body where there is obstruction, and subsequent stagnation, infection inevitably follows.

With the increase in the frequency a little hæmaturia may occasionally occur. This is due to the rupture of one of the small dilated vessels on the bladder mucous membrane following straining.

A change also occurs in the early stages in the character of the urinary stream. This change may fall into three subdivisions; they are a difficulty of starting, of keeping going, and of stopping. Later, the patient may be seized with a sudden attack of acute retention, and this will frequently be the first symptom to drive him to his medical man. A warning should be sounded here—that similar trouble is frequently the first complaint in the earlier stages of *tabes dorsalis*, so that the knee-jerks, pupil reflexes, &c., should always be

examined in these cases. At this stage patients suffering from an enlarged prostate frequently complain of considerable suprapubic pain.

Following these symptoms general changes soon begin to occur. They are due to the decreased efficiency of the kidneys as a result of back pressure acting directly through the bladder and ureters, and in those cases with marked cystitis to a toxic absorption.

The general changes constitute a striking clinical picture, and are of the greatest importance in the choice of the one- or two-stage operation, quite apart from any laboratory findings. They are a feeling of general lassitude, a decreased power of mental concentration, headaches of increasing severity, loss of appetite, particularly for meat, slight rises of temperature, and a gradual raising of the blood pressure.

Passing on to clinical methods of diagnosis, one comes to those for both the local and general condition.

Locally the digital examination of the prostate per rectum is our first method. As regards this I would like to point out firstly the characters of the normal prostate. There are two lateral lobes which lie flush with the plane of the anterior rectal wall—i.e., not protruding—separated by a median groove with the mucous membrane moving freely over them. The consistency is fairly soft.

In the adenomatous type of prostate, the lateral lobes become enlarged and protrude into the rectum, the median groove becomes obliterated, the consistency harder than normal, but the gland still moves freely and the mucous membrane of the rectum is not attached to it.

It should be remembered here that if the adenoma is limited to the median lobe of the gland—i.e., that position lying between and above the common ejaculatory ducts—it will not be felt by rectal examination.

In the fibrotic type the gland will be harder and more resilient than normal, but its contour will be unchanged and its size may even be decreased.

In the malignant type the gland will be enlarged, less freely movable than normal, may be firmly fixed, and in late cases the rectal mucous membrane may become involved.

Digital percussion suprapubically will disclose the presence of a dilated bladder. The second method of local examination is by the use of the cystoscope. This I think should never be omitted. Firstly, the passage of a cystoscope will disclose the presence of a urethral stricture, which should always be treated before the prostatic enlargement is attacked. Before the passage of the instrument the patient should be instructed to pass his water, then that which is subsequently drawn off through the cystoscope will represent the degree of residual urine.

The subsequent examination of the interior of the bladder will disclose (1) the degree of intravesical prostatic enlargement, (2) the condition of the bladder mucosa—i.e., the degree of cystitis.

* A lecture delivered at the North-East London Post-Graduate College.

This has a great bearing on the subsequent type of operation; as a "dirty" bladder definitely indicates a two-stage operation with bladder lavage between the two procedures.

The condition of the mucosa should always be examined from one other point of view—namely, for ulceration over the region of the enlarged prostate, which occurs as a direct spread in those of malignant origin.

As regards the examination of the general condition of the patient, that can be done, firstly, from the clinical picture which I have already outlined; secondly, from the blood-urea and urea-concentration examinations (which I do not propose to discuss here); and thirdly, by a moderately accurate test of the renal efficiency arrived at by the use of the cystoscope. The latter consists in the intravenous injection of a 0.3 per cent. solution of indigo-carmin, 3 c.cm. being used. This dye is excreted via the kidneys in three to four minutes under normal conditions, and can be observed by cystoscopic examination in the ureteral influxes. A delay of (up to) three minutes is taken to mean a slight amount of renal damage, of three to six minutes a moderate, and of six to ten minutes a severe amount. One other secret which the cystoscope may reveal is the presence of vesical calculi, not uncommonly found behind an enlarged prostate.

As regards the malignant prostate, it must be remembered that the adenomata are liable to undergo malignant change, which sometimes only becomes apparent after microscopic examination of the enucleated gland.

TREATMENT.

The treatment of the enlarged prostate can be divided into two methods: (a) curative, and (b) palliative.

The *curative* method consists in the enucleation of the gland from within its covering of the visceral pelvic fascia. This operation can be carried out in one or two stages. The determining factor will be the general and local condition of the patient, a guide to which I have attempted to lay down under the heading of diagnosis.

If the operation is to be done in two stages, the bladder is opened suprapubically after first distending it with about 2 oz. of saline solution. A large tube is then inserted and the bladder wall fixed by two catgut sutures to the anterior rectus sheath. Some surgeons use a De Pezzer's tube for drainage of the bladder, but I find that this frequently gets blocked with phosphatic deposits. If cystitis is present I now wash the bladder out once daily with 1-10,000 silver nitrate solution and wait until the patient's general and local condition is ready for the enucleation. This I perform suprapubically by passing the finger into the prostatic urethra and pressing upwards so that the anterior commissure of the prostate is split longitudinally. The finger is then passed outwards to the right or left, and should slip into the plane of alveolar tissue

which lies between the sheath and capsule of the gland. By sweeping the finger round its periphery the gland will usually be found to shell out fairly easily, but sometimes a fair amount of pressure is needed. Having enucleated the gland, the bar of hypertrophied muscle-fibres which frequently develops immediately posterior to it is felt for, and if found split transversely with the finger at its centre. The prostate and general bladder cavities will now be found to merge into one. The raw area from which the prostate was enucleated should now be packed with gauze, or a distensible bag may be used, and a large tube of about 1 in. bore placed in the bladder. The patient is then given morphia, gr. $\frac{1}{4}$, hypodermically and returned to bed.

The packing or bag is removed after 48 hours and an Irvine's box placed over the suprapubic wound. On the fourth day I start washing out the bladder via the urethra with a nozzle attached to an irrigator and a head of fluid pressure, usually 2-3 ft., and continue until the suprapubic wound is closed. The large tube is removed from the bladder on the seventh day. The average length of time taken for the suprapubic wound to become dry is, in my experience, 21 days.

Palliative methods should be kept for those cases in which the patient is too old or feeble to stand the enucleation operation, and the malignant cases whose end is, I think, only hastened by attempts at enucleation.

The palliative measures consist in the establishment of permanent suprapubic drainage by a small rubber tube (size No. 12 English catheter) in the bladder, fitted to a belt and portable urinal. The tube in these cases should be frequently removed, cleaned, and replaced. The malignant prostate can also be treated by the application of radium emanations. These can be introduced either through the suprapubic wound or through a transverse incision made in the perineum. Radium I have found has a markedly beneficial effect on the malignant prostate, but I have never seen a cure.

In cases where operation is refused the prostatic urethra can be temporarily widened by the use of the prostatic punch or by the diathermy cautery used through the operating urethroscope.

FROM time to time inquiries are made at the offices of the Fellowship about post-graduate courses in other towns than London in Great Britain, and often it is impossible to answer them because information has not been forwarded to the Secretary of the Fellowship. It would do much to help post-graduates if details of all post-graduate courses held in this country were regularly supplied to the Central Office of the Fellowship, 1, Wimpole-street, London, W. 1. Better still, it would be a great advantage if the programme of post-graduate courses held elsewhere than in London were advertised in this journal.