A Lecture ON CANCER OF THE COLON.*

BY
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CANCER of the colon is usually a primary disease, but occasionally the bowel becomes involved by extension of the mischief from an adjacent viscus, such as the stomach. Infection by metastasis also is not unknown. Five years ago I met with an example of this in a female aged 34 years. She had an advanced cancerous growth in the mid-rectum and a small but well-defined nodule on the anti-mesenteric border of the sigmoid. The mucous membrane underneath the latter was implicated but not actually ulcerated, and it had all the appearance of being of recent formation. The nodule was removed in performing a colostomy preliminary to the extirpation of the rectal cancer, and is preserved in the pathological museum of the Sheffield University.

AGE INCIDENCE.

While most common between the ages of 40 and 65 years, the proportion of cases under the age of 40 years is much greater than obtains in cancer elsewhere. Maydl estimated that 14 per cent. of all intestinal cancers occur in patients under the age of 30 years, and nearly 17 per cent. between the ages of 30 and 40 years. This unusual age incidence should not be lost sight of.

FREQUENCY AND DISTRIBUTION.

The relative frequency of the disease and its distribution have been worked out by Nothnagel from the abundant data available in the Vienna General Hospital. During the period of twenty-four years—1870-93—41,838 *post-mortem* examinations revealed 3,583 cases of cancer, of which 343 were situated in the intestines. The various parts were involved as follows: Duodenum, 7 cases; ileum, 10; colon, 164; rectum, 162. In the colon the distribution of the disease was—appendix, 2 cases; caecum, 23; sigmoid, 53; elsewhere, 86. Nothnagel's figures harmonize with similar statistics obtained from other and more recent sources, and may be taken as approximately correct.

PATHOLOGICAL CHANGES.

Almost invariably the disease is of the columnar-celled type. Starting in the glandular epithelium, it permeates the basement membrane, infiltrating the submucosa and, later, the muscular coats. The growth tends to spread circumferentially rather than in the long axis of the bowel, and it is quite common to meet with advanced cases in which little more than an inch of the length of the colon is involved. Two varieties of the disease require a brief description. One, the sclerosing variety, is of such relatively frequent occurrence that it may be regarded as the typical form. Growing very slowly, it leads to an annular constriction of the bowel which, if the patient lives long enough, will end in obstruction. It seldom produces a tumour larger than a bantam's egg, but the accumulation of solid faeces proximal to it may cause quite a large swelling. Internally there is a deep irregularly-shaped ulcer with hard everted edges, while externally the bowel presents a narrow transverse groove, just as if a piece of string had been tied around it. Many months may elapse before the peritoneum becomes invaded, but once this barrier has been surmounted dissemination is apt to be rapid.

The mesenteric glands are affected late, if at all; nor should it be assumed that when these glands are enlarged they are necessarily malignant, because simple hyperplasia from irritation is quite common.

The colon proximal to the growth becomes dilated and its muscular tissue greatly hypertrophied, while its colour approximates to that of striated muscle. Slight intussus-

ception into the distal healthy bowel may cause a further narrowing of the contracted lumen.

In a minority of cases the disease is of the fungating type. In addition to extensive infiltration of the coats of the bowel, the growth sprouts into its interior, forming friable masses, which soon break down and give place to offensive ulcers. There is no constriction of the bowel with its consequent proximal hypertrophy and ultimate obstruction. It occurs most often in young people, and is characterized by rapid growth, early dissemination, and pronounced cachexia.

SYMPTOMS.

There are, unfortunately, no early symptoms of cancer of the colon, and in hospital practice the patient rarely seeks advice until the advent of intestinal obstruction or some other late sequel of the disease. In the fungating variety highly offensive motions mixed with blood and pus, and rapid deterioration of health, are the usual factors which lead to a diagnosis; but in the sclerosing variety there may be nothing to indicate a departure from the normal until the diameter of the bowel has been seriously encroached on. The earliest manifestations of the disease are increasing difficulty in getting the bowels to act, occasional attacks of diarrhoea, alternating with days of complete constipation, and colicky pains associated with vigorous intestinal peristalsis. Later the abdomen becomes distended, the tongue dirty, and the breath offensive, while the appetite and digestion are impaired. The growth is sometimes palpable, especially when situated in the central portion of the descending colon, or in the caecum, but quite often it cannot be felt owing to its deep position and the associated flatulent distension.

Eventually a plug of solid faeces engages the stricture, and acute, or semi-acute, intestinal obstruction supervenes, or a similar condition may be brought about by partial intussusception and kinking of the bowel at the site of the disease. In other cases ulceration of the growth may go on to perforation. This catastrophe befell a lady I saw some years ago with Dr. Montague of Workop. She had a sclerosing cancer of the pelvic colon, and in the interval between the consultation and the time fixed for operation the bowel gave way, flooding the pelvis with faeces.

Should there be only slight leakage, a barrier of inflammatory lymph aided by the friendly omentum may for a time arrest the spread of the mischief. In such cases the tumour, if it has been previously recognized, will be found suddenly to increase in size, and there will be all the signs of a sharp attack of localized peritonitis. I have twice observed this condition in hospital patients. In one case the diseased bowel was successfully resected, but in the second the temporary barrier broke down during the attempt to remove the growth, and a fatal peritonitis ensued. Occasionally perforation occurs some distance above the growth. I saw a case of this kind a few years ago with Dr. Samuel Mathews. The patient, a male aged 76 years, was suffering from acute obstruction of several days' duration due to a cancer of the sigmoid, and on opening the abdomen a large perforation was found in the caecum.

DIAGNOSIS.

In obstruction from cancer of the colon distension always precedes vomiting, usually by some days, and the vomiting is not so rapidly progressive in character as when it is the result of strangulation. A marked feature in every case is the violent peristaltic movements of the hypertrophied proximal colon, which can be felt and seen through the abdominal walls. These movements are always associated with exacerbations of the abdominal pain, and the combination is characteristic of stricture of the colon. In the vast majority of cases at or beyond middle age stricture means cancer, but the prudent surgeon will think of other causes, such as syphilitic, dysenteric, or tuberculous ulceration, all of which may lead to stenosis of the large bowel. Again, a thorough examination of the pelvis should be made so as to exclude cancer of the rectum as well as tumours of the uterus or ovaries; and, lastly, faecal impaction consequent on atony of the colon must not be forgotten. In the latter condition peristaltic movements are conspicuous by their absence, obstruction is not absolute, and the upper rectum will be full of faeces. Tumours about the caecum tho

* Based on a post-graduate lecture delivered at the Sheffield Royal Infirmary.

result of local tuberculous disease, actinomycosis, and especially chronic suppurative appendicitis, may simulate more or less closely malignant growths. Tuberculosis of the caecum is most common in females under the age of 40 years. The lump from the first is usually quite fixed, whereas one of the characters of a cancerous tumour of the bowel, until far advanced, is its free mobility. There will probably be long-continued diarrhoea, and always evening pyrexia, while obstruction is almost unknown. A retrocaecal chronic abscess with its thick, hard walls and enlarged mesenteric glands often causes perplexity, even after the abdomen has been opened. The fact that the lump is behind the caecum and does not appreciably encroach on its lumen should arouse suspicion, and cause the surgeon to separate it from the iliac fossa, when the escape of evil-smelling thick pus will reveal the true nature of the case. Of the possible sources of error in diagnosis this is undoubtedly the most dangerous.

Occasionally a faecal concretion or a foreign body becomes lodged in one of the sacculi of the colon, and sets up chronic inflammatory changes, with the production of a tumour which, until exposed, may be indistinguishable from a cancerous growth. Quite recently I operated on a case of this kind where a large gall stone was the offending cause. The previous history indicated that the gall stone had escaped from the gall bladder more than a year previously.

Should the growth be impalpable it may still be possible to locate it more or less accurately. A distended transverse colon will limit it to or below the splenic flexure. Sigmoid growths may, in rare cases, be diagnosed by the use of the sigmoidoscope, while radiography conjoined with the use of bismuth gives valuable information. The patient himself will often accurately localize the seat of obstruction by noting the point where the painful peristaltic waves are arrested. On several occasions I have obtained confirmatory evidence of the site of obstruction by observing the amount of water that could be introduced into the rectum with the patient in the Trendelenburg posture.

TREATMENT.

Where obstruction is imminent, or existent, temporary relief may sometimes be afforded by enemata, but purgatives should be avoided, as they are worse than useless.

Seeing that the usual type of growth eventually leads to obstruction, unless the sufferer falls a victim to some intercurrent disease, it follows that in a large percentage of cases surgical intervention becomes obligatory sooner or later. With few exceptions, operative measures should be undertaken immediately a diagnosis has been established.

The facility with which even a large segment of the colon can be removed, and the usual absence of dissemination until late in the disease, make cancer of the large bowel exceptionally suitable for extirpation, and free resection should be the "operation of election"; but this ideal treatment is not possible in some cases because of the extent of the disease, while in others, for reasons which will be referred to later, it may not be expedient to carry it out.

Mortality attending Colectomy.

The mortality-rate attending the operation of colectomy, which until a few years ago amounted to upwards of 40 per cent., has been greatly reduced by improved operative technique, more especially by the adoption of a preliminary colectomy in all cases where intestinal obstruction is present. In the hands of experienced surgeons who make a judicious selection of their cases it probably does not now exceed 15 per cent., while some individual operators can show even better results.

Dr. W. J. Mayo has very kindly sent me the Rochester Clinic results for the year 1912 up to December 13th. They comprise 69 colectomies for cancer, with 10 operation deaths.

My own statistics are vitiated by the fact that the records of many of my hospital patients are missing, and it is not possible to trace them.

I have, however, a complete record of all my private cases. They amount to 26, and are spread over a period of fourteen years (1899-1913). In 15 of them acute, or semi-acute, intestinal obstruction was present when they were first seen, and in every instance was relieved by

colostomy, the growths being removed after intervals varying from ten days to three weeks. Four patients died from the operation—two from pulmonary embolism on the sixth and thirteenth day respectively, one because of defective union of the divided bowel, and one from shock. Of the 22 patients who recovered from the operation, 5 have since died from recurrence of the cancer after intervals ranging from seventeen months to four years. In one of these impending obstruction was successfully overcome by "short-circuiting," and the patient lived in comparative comfort for eight months afterwards. All were singularly free from pain, and in all evidence of cancer of the liver was present towards the end. A sixth patient, although still alive after three and a half years, is known to have a local recurrence. There have been three additional deaths after intervals of eleven, four, and two years respectively, in which, although the immediate cause was other than cancer, no *post-mortem* examination was obtained.

Thirteen patients remain in apparent good health—8 after the lapse of periods ranging from fourteen to four years, and 5 who were operated on within the last three years.

A study of my fatal cases affords reason for hoping that in a future series the results might be better. Thus to have lost 2 patients out of 26 from pulmonary embolism was distinctly hard luck, all the harder because in both cases the immediate dangers of the operation had apparently been surmounted, and a smooth convalescence seemed assured. The death from shock was the outcome of a false optimism, the disease in this case being too advanced to justify radical treatment. The fourth fatality was occasioned by the passage of a large scybalum through the imperfectly healed bowel, and might not have occurred had a preliminary colostomy been done.

Limitations of Colectomy.

Let us for a moment consider the limitations which should be placed on colectomy, bearing in mind that it belongs to the class of "operations of expediency." First of all, it should never be resorted to in the presence of intestinal obstruction. The distended and congested proximal portion of the gut is quite unfit to take part in the reparative process essential to the success of a resection, while the inevitable toxæmia associated with the condition is an additional bar to success.

In these cases colostomy must be the first step, and, if it is to be followed by colectomy, at least a fortnight should intervene between the two operations. In the interval the diseased segment should be thoroughly irrigated so as to dislodge all faecal matter and render its interior as clean as possible.

Then we come to patients who have attained the age of 70 years or upwards, and whose expectation of life, under any circumstances, is limited to a few years. It is quite true that old age of itself does not necessarily add greatly to the risk of the operation, but a definite operation death-rate of at least 15 per cent. to such people becomes a most serious, if not fatal, objection; especially if it be borne in mind that in advanced life the disease is of relatively slow growth, and that comfortable, even active, life for several years is not incompatible with malignant stricture dealt with by colostomy. In my hospital practice two patients, both elderly females suffering from sigmoid cancer, lived useful lives for periods of upwards of four and five years respectively after colostomy.

Again, in the rapidly growing cancer of young people the results following attempts at radical cure are rarely satisfactory, and the procedure should be restricted to early cases.

Lastly, serious organic changes in other organs should negative its adoption.

Colostomy.

The alternative operative procedure is colostomy. This, or short-circuiting, should be done in cases unsuitable for resection, and, as already stated, it should be the first step in treating patients suffering from obstructive symptoms. Even in the absence of obstruction there is much to be said in favour of colostomy before proceeding to the more dangerous operation. The additional information gained by an intraperitoneal examination of the growth and the abdominal viscera will sometimes help the

surgeon, when in doubt, to decide in favour of radical treatment, while in others it will, by revealing the presence of secondary growths in the liver or elsewhere, exclude attempts to eradicate the disease. Moreover, by its adoption the risk of wound infection during the performance of colectomy can be greatly lessened, while the subsequent healing of the divided gut is greatly facilitated by the exclusion of the faecal stream and the absence of tension at the line of sutures. Furthermore, the experience of many surgeons is strongly in its favour. Thus, Anschütz states that in Mikulicz's clinic the effect of introducing it was to reduce the mortality-rate of colectomy from 52 per cent. to 20 per cent. All the fatalities I have had in my private practice occurred in cases where the single-stage operation was done, and I am so firmly convinced of the superiority of the two-stage procedure that I have employed it exclusively for the last five years.

Operative Technique.

Unless the patient's condition is so critical as to negate more than the minimal interference required for a colostomy, I explore through a medium subumbilical incision, large enough to admit one's hand. The site and extent of the growth are first investigated, and then the presence or absence of secondary growths ascertained. The information thus obtained assists one to decide whether radical or palliative measures shall be adopted, and protects the patient, so far as possible, against being subjected to a severe and useless operation if he should unhappily have a secondary growth in his liver.

If extirpation is held to be impossible or inexpedient, the colon is brought to the surface and opened a little way above the growth, so as to preserve the function of as much healthy bowel as possible; or, in the absence of obstruction, short-circuiting is substituted for colostomy in suitable cases. These comprise patients in whom the anastomosing portions of the bowel can be drawn outside the abdomen and their surfaces approximated without undue tension. Restricted to such cases, the operation is quite a safe one, and much to be preferred to colostomy.

In cases selected for resection and where the growth is distal to the hepatic flexure, the preliminary colostomy is made in the ascending colon, just above the caecum, and through a small special opening in the abdominal wall.

It is unnecessary to enter into all the details of the operation, but a few points may be dwelt on. It is essential to bring out a long loop of the colon with the growth in its centre, and it is usually necessary to divide the outer tense leaf of the mesocolon before this can be done. As it is separated from the mesenteric vessels by a layer of loose areolar tissue, no harm can result from its free division. The mesocolon should be examined for enlarged glands, and the distribution of its blood vessels carefully noted. There is very little lateral anastomosis between the terminal branches of the colic arteries, and, in order that the blood supply of the bowel, right up to the point of section, shall not suffer, the division of the mesentery must be through the boundaries between the areas supplied by the larger arterial branches.

Having decided on the length of bowel to be removed, a chain of interlocking silk sutures is inserted, well to the inside of any glands present, and so as to include a V-shaped portion of the mesentery with its apex pointing inwards. The mesocolon is now divided distally to the sutures, and the segment of bowel to be removed is quite free except at its ends. The entire space from whence the bowel has been raised, together with the wound in the abdominal wall, are securely packed with gauze, of which there should be several superimposed layers. The colon is divided between pairs of clamps placed at least 1 in., and further if possible, above and below the growth. The bowel should be divided obliquely, so that the anti-mesenteric edge of the portions left shall be slightly shorter than their mesenteric border.

The next thing to decide is how the continuity of the resected bowel shall be restored, and here we have a choice of three methods—axial, or end-to-end anastomosis; end-to-side, or lateral implantation; and side-to-side, or lateral anastomosis. Each of these in selected instances gives excellent results, but no one of them is suitable for every case.

Theoretically the ideal plan would be axial union, but there are difficulties in applying it to the class of cases

under review. The circumference of the proximal end of the divided colon is always very much greater than that of its distal end, while its walls are two, three, or more times as thick; then there is the peritoneal hiatus between the layers of the mesocolon, which is generally considered to be a weak spot in the line of anastomosis; and, lastly, its successful accomplishment demands a higher grade of surgical technique than is required for either of the other methods. Generally speaking, it should be reserved for cases in which the length of bowel available after resection is too small to permit of an alternative procedure. In actual practice such cases are of frequent occurrence. The second plan—that by lateral anastomosis after invagination and closure of the ends of the bowel—should be “the method of election,” but it is necessary for its safe adoption that the ends of the bowel should overlap for at least 4 in.

The method of lateral implantation, or end-to-side anastomosis, should be reserved for cases of excision of the caecum, for which it is especially applicable. Here, and perhaps here only in the surgery of the large bowel, Murphy's button may be advantageously employed. Occasionally, after the removal of a growth in the pelvic colon, it may be impossible to make a satisfactory anastomosis, owing to the shortness of the lower end of the bowel. In such cases the lower end must be closed, after invagination, and dropped into the pelvis, while the upper end is stitched to the skin and retained as a permanent artificial anus.

There are few operations in surgery in which good technique counts for so much, and every step in the procedure should be carried out deliberately and with infinite care.

Next to good suturing, the avoidance of wound infection is most important. This is best accomplished by the liberal use of gauze, the discarding of all instruments immediately they have become contaminated, and the frequent changing or disinfection of soiled gloves.

If there is reason to fear that the wound has been infected, the omentum should be used to isolate the operation area from the rest of the peritoneal cavity, and a drain tube should be inserted, but with good technique drainage is neither necessary nor desirable.

CASES.

The appended cases are quite typical of the disease. Two of them came under my care on consecutive days, and the third a few months later in the same year.

CASE I.

J. H. C., aged 56 years, seen in consultation with Dr. Graham Lander, of Hathersage, on January 30th, 1908. There was a three months' history of increasing difficulty in getting the bowels to act. There had been complete obstruction for seven days and vomiting for three days. The patient looked very ill and had a dry, brown tongue. He complained of abdominal pain which, while continuous, was subject to exacerbations every few minutes. The abdomen was distended and tympanitic but not tender. Contact of the hand with the abdominal wall induced vigorous intestinal movements. The rectum was empty. A diagnosis of acute intestinal obstruction due to stricture of the colon was arrived at. As the patient's house was in many ways unsuitable for an operation, he was taken to a surgical home in Sheffield. The journey of thirteen miles in a horse ambulance tried him a good deal, and it was felt that immediate surgical interference should be restricted to the irreducible minimum. Accordingly, under local anaesthesia, a small opening was made in the right semi-lunar line and the first presenting coil of distended intestine sutured to the skin and punctured. When the bowel had emptied itself a Paul's tube was inserted. Immediate relief was afforded and the vomiting ceased. When the abdominal distension had subsided a small, hard lump could be felt in the left iliac fossa.

On February 13th a cancerous growth of the upper end of the sigmoid was freely excised, the ends of the bowel being united axially by a double row of continuous suture. The growth was limited to 1½ in. of the length of the bowel, and had produced a very tight stricture. The mesenteric glands were not involved, and there was no evidence of secondary growths elsewhere. The patient's progress was interrupted by the development of a large right-sided pelvic abscess, but at the end of two months his condition was quite satisfactory, and, having tested the patency of the colon by forcing water from the artificial anus through the rectum, the opening, which proved to be in the ileum, 3 in. above the ileo-caecal valve, was closed.

He made an excellent recovery, and is now—five and a half years later—quite well, and filling with distinction, for the second year, the office of mayor of his town.

CASE II.

J. S., aged 59, seen in consultation with Dr. Menzies, of Workop, on January 31st, 1908.

The patient had enjoyed robust health until a few months previously, when he began to have attacks of colicky pain in the abdomen and had to resort to the use of purgatives. A fortnight previously the pain became much more severe, and there had been complete obstruction of the bowels for eight days; vomiting had set in and was progressive in character. His abdomen was distended and tympanitic, while vigorous peristaltic movements could be seen and felt through the parietes. These were accompanied by a sharp increase of the pain. The rectum was empty. His pulse was of good quality, and his general condition, apart from the obstruction, satisfactory, but as the usual medical measures had failed to give relief it was thought best to operate forthwith.

The abdomen was opened in the middle line below the umbilicus and a thorough but ineffectual search made to find the obstruction. All that could be ascertained with certainty was that it was lower than the transverse colon. A second smaller opening was made over the caecum, and through this a portion of the distended ascending colon was withdrawn and stitched to the skin. Before introducing a Paul's tube the central wound was closed and sealed with collodion. The operation was immediately successful in relieving his symptoms, and the central wound healed under the first dressing.

In order to locate accurately the site of the obstruction he was placed in the high Trendelenburg position, and the lower colon filled with water under a pressure of two feet. About three pints could be introduced, and this observation, conjoined with what I had learnt during the exploration, enabled me to fix the point about the splenic flexure.

The patient, being now in very good condition, was taken to a surgical home in Sheffield, and the abdomen entered through the left semilunar line. A hard nodular tumour was found at the splenic flexure. After dividing the outer layer of the mesocolon, it was with difficulty drawn out of the wound. Several enlarged glands were present, and these, together with the growth, were freely excised, and an end-to-end anastomosis effected by continuous suturing. The wound had quite healed at the end of a fortnight, and, after testing the patency of the resected colon by injecting water into the rectum until it escaped from the colostomy opening, the artificial anus was closed. Aseptic healing resulted, and the patient returned to his home six weeks after the first of his three operations. He remained in excellent health for the succeeding eighteen months; then symptoms of obstruction reappeared. The abdomen was once more opened, and a local recurrence, together with a secondary nodule in the liver, were found. The colon was short-circuited by anastomosing the caecum with the sigmoid. This gave him the desired relief, and he lived in comparative comfort for another eight months. It is of interest to note that this patient had actually been gaining weight, and was not conscious of any loss of strength or vitality up to the onset of obstruction.

CASE III.

W. B., aged 55 years, was seen in consultation with Dr. George Booth, of Chesterfield, on September 29th, 1908.

The patient, who was stout and of sedentary habit, gave a history of chronic constipation for many years, but with the aid of purgatives and enemata he had had a hard motion almost daily until six days previously. Since then there had been complete obstruction, with recurrent attacks of acute abdominal pain accompanied by violent intestinal movements. The abdomen was greatly distended, and he complained of tenderness over the caecum and the sigmoid. The rectum was empty and ballooned. There had not been any vomiting, but his tongue was brown and dry, probably owing to morphine which he had taken. His urine contained 8 grains of sugar per ounce, and had constantly done so for at least seven years, but there was no polyuria. The pulse was 108 per minute, and of good quality.

He was conveyed to a surgical home in Sheffield. An enema of 4 oz. of mist. alba and 1 oz. of glycerine produced a free evacuation and he rapidly improved. Hydrostatic distension of the lower bowel suggested a block about the upper end of the sigmoid; but, in view of the long-continued glycosuria and his flabby condition, operative measures were put off in the hope that acute obstruction might not recur. He went home, but in a few days his troubles returned, and, with a full knowledge of all the facts in his case, he pressed for an operation. He was readmitted to the surgical home, and the abdomen explored through the right semilunar line. A small, hard, freely movable growth could be felt in the sigmoid. The liver and other abdominal viscera were examined for secondary nodules, but nothing abnormal was found.

The caecum was enormously dilated and its muscular tissue greatly hypertrophied. A Paul's tube was tied into it, and he was thereafter quite comfortable.

Fourteen days later the growth was excised through an opening on the left side. The resected ends of the bowels were united axially by continuous suturing. The operation caused much shock, and at its close the pulse-rate was 160 per minute. His subsequent progress was quite satisfactory, and at the end of a fortnight the caecal anus was closed. He remained quite well, except for his glycosuria, until the autumn of 1912, when without any premonitory warning acute obstruction supervened while he was on a holiday in the south of England. He was operated on, and a tense band which was causing the obstruc-

tion, was divided, but he did not recover. The operating surgeon failed to find any evidence of recurrence, but the abdomen was not fully explored, and there was no *post-mortem* examination.

CARCINOMA OF THE PROSTATE GLAND:

A STUDY OF THIRTY-THREE CASES.

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THE subject of malignant tumours of the prostate gland is of considerable interest, but I propose to only deal with carcinoma. While sarcoma of the prostate is extremely rare, carcinoma of the prostate is by no means uncommon. Albarran's statistics show that 14 per cent. of all prostates which are taken away by operation turn out to be malignant; while H. H. Young, of the Johns Hopkins Hospital, Baltimore, goes even further, and states that 21 per cent. (that is, 1 in every 5 cases) of all enlarged prostates removed show a tendency to malignancy.

Some authorities definitely state that cancer of the prostate supervenes on a simple adenoma; others are equally positive that it does not. The practical importance of settling the question is that, if an innocent tumour is a precursor of a malignant growth, then it will be the duty of the surgeon to recommend that every benignly hypertrophied prostate gland be removed by operation immediately the patient seeks advice—that is, directly the condition begins to cause symptoms. Young of Baltimore, who has made a very careful study of the pathology of carcinoma of the prostate, says:

It may begin as an isolated nodule in an otherwise benign hypertrophy; or a prostate enlargement, which has for many years furnished symptoms and signs of benign hypertrophy, may suddenly show signs of malignant hypertrophy.

As to the way cancer of the prostate spreads, Young's description is well worth quoting. He says:

It spreads along the ejaculatory ducts into the space immediately above the prostate between the seminal vesicles and the bladder and beneath the fascia of Denonvilliers. Then the disease gradually invades the inferior surface of the trigone and the lymphatics leading towards the lateral walls of the pelvis, but involvement of the pelvic glands occurs late, and often the disease metastasises into the osseous system without first invading the glands.

His operation for radical extirpation of the prostate in cancer was devised from observations made at operations and at autopsies. Like cancer of the thyroid gland, secondary deposits in carcinoma of the prostate are out of all proportion to the primary growth. The internal iliac lymphatic glands are the first group to be secondarily invaded.

I have collected notes of 33 cases of carcinoma of the prostate, and, although some of the records are incomplete, I have endeavoured to make a careful analysis of them. No case had secondary deposits in bone so far as I have been able to ascertain.

A.—SYMPTOMS.

1. *Duration.*

With regard to the period between the patient first noticing anything wrong and the onset of symptoms which compelled him to seek the aid of the surgeon, in 66 per cent. the onset of the initial symptom was within twelve months of him coming under the care of the surgeon; further, in 10 of these cases—that is, 30 per cent. of the total—the time was only three months.

		Cases.	
Within	3 months	10	30 %
"	6 "	2	} 66%
"	9 "	3	
"	12 "	7	
"	18 "	1	
"	24 "	5	
"	3 years ...	2	}
"	4 "	2	
"	25 "	1	
		33	

* Read before the Newcastle-upon-Tyne Division of the British Medical Association.