The Erasmus Wilson Lectures

ON

ADENOMA AND ADENO-CARCINOMA OF THE RECTUM.

Delivered before the Royal College of Surgeons of England.

By SIR CHARLES B. BALL, M.Ch., F.R.C.S.I.,
HON.F.R.C.S.ENG.,

Regius Professor of Surgery in the University of Dublin.

LECTURE I.—SIMPLE, MULTIPLE, AND CONGENITAL ADENOMATA.

THE selection of a subject worthy of the Erasmus Wilson lectures and of the audience to which they are addressed, was to me a matter of considerable difficulty. In the choice that I have made I have been influenced by two considerations. 1. The relations of purely benign to malignant adenoma of the intestine is a matter of considerable scientific interest, some pathologists apparently believing that adeno-carcinoma is from its inception essentially different from the benign variety of adenoma, and that the transition of the latter into the former does not occur, a view which I find it difficult to suppose from a somewhat extended clinical experience. 2. The good results obtained by the surgical treatment of cancer of the rectum, if operated on in the very earliest stage, and the difficulties of making a diagnosis at a sufficiently early period, appeared to me to make the subject one of interest to the practical surgeon.

Having had the advantage of the assistance of Professor Scott in making a number of lantern slides, I have thought that these lectures would prove more interesting if they largely took the form of lantern demonstrations.

Fig. 1.—Pedunculated lymph-adenoma springing from the mucous membrane of the rectum ($\times 5$).

By the word adenoma we understand a tumour which is largely composed of epithelial tissue similar to that formed in secreting glands, and when occurring in the intestinal tract the epithelial elements of the new growth correspond with those normally found in the follicles of the intestinal mucosa. If the epithelial proliferation is simply a surface development, even though it may produce a tumour of considerable dimensions projecting into the lumen of the bowel, we speak of it as a simple adenoma; and if, on the contrary, the epithelial development grows through its basement membrane, invades the submucosa, infiltrates the muscular coat, and even the tissues outside the intestinal tunic, the case is one of infiltrating adenoma or adeno-carcinoma, which is the typical form of intestinal cancer, and is characterized by all the clinical evidence of malignancy. We occasionally meet with small tumours which clinically resemble closely simple adenomata, but which upon microscopic examination prove to be composed of lymphoid tissue instead of the epithelial elements so characteristic of the ordinary adenoma; these lymph-adenomata originate in the solitary glands of the intestine; they are very rare, but few cases having been recorded. Personally, I have only seen one such case which presented

all the clinical characteristics of an ordinary pedunculated adenoma, its real nature only being apparent when a section had been examined.

Unlike haemorrhoids, which are confined to the rectum, adenomata, both the simple and infiltrating varieties, are found throughout the entire length of the intestinal tract, but are much more frequently met with in the rectum; no doubt this is in part due to the greater facilities for diagnosis afforded by the lower bowel, but allowing fully for this consideration, it is certain that the actual frequency of occurrence of these growths in the rectum is much greater than it is in the other portions of the intestine.

There is a close analogy between the growth of adenomata of the intestinal mucosa and cutaneous warts, the increase of the papillae of the skin and overgrowth of epithelium on the surface of a wart has its exact counterpart in the formation of a small adenoma; both occur more frequently in children; there is a tendency in both for the surface to be increased by tuberculation and fission; the tendency to become pedunculated, although more frequent in intestinal adenoma, is not uncommon in cutaneous papilloma; and as the cutaneous wart, after existing for many years without apparent change, may spread into the deeper tissues and become a malignant epithelioma, so we find that cancer of the rectum may have been preceded for a long time by a purely benign adenomatous growth, particularly if the tumour is one of the sessile and not pedunculated varieties of simple adenoma.

In that portion of the anal canal which is covered by scaly epithelium we occasionally meet with papillomatous growths which may grow to a considerable size, and which resemble closely the "villous" adenomatous growths in the bowel above, except for the character of the epithelial covering. These anal papillomata are of similar structure to the venereal warts so common upon the prepuce, and, like them, are probably due to the maceration of the skin by irritating discharges.

Fig. 2.—Papillomatous warts (villous tumour) of the lower portion of the anal canal, the surface entirely covered with scaly epithelium.

The relation of the simple to malignant adenoma is a question of great interest. Pathologists have from time to time thought that, from the way in which the protoplasm of the epithelial cells stain, from the presence or absence of goblet cells, from the fact that the epithelium lining the acini was disposed in one or more layers, and from other characters of the epithelial cells themselves, they have been able to discriminate between the benign and malignant forms. It, however, appears that none of these characters are sufficient alone to make the diagnosis, there is one, and one only, positive evidence of malignancy, and that is the perforation of the muscularis mucosae and the development of the epithelial elements in the deeper structures of the intestinal tunic, once this has occurred the growth of epithelium becomes rampant; it invades all structures in its neighbourhood, and reproduces itself in distant parts. What the explanation is of this increased growth, once the basement membrane is penetrated, is the enigma which the large army of cancer researchers at present working have set themselves to solve.

There is little doubt but that the origin of certain cases of

adenoma can be traced to local irritation. In cases of prolapsus recti in young children we often find small sessile adenomata on the exposed mucous membrane, these, which are quite too small to have had anything to say to the production of the prolapse, are in all probability caused by friction against the child's clothing, and upon the exposed mucous membrane of a colotomy wound in like manner, we not infrequently can watch the development of similar

Fig. 3.—Widely diffused adenomatous growth of the rectum. One-fourth natural size, probably caused by hairball. At one point the intestinal tissue was penetrated by an infiltration of the growth.

growths. Again, in cases of cancer of the rectum attended with copious discharge we occasionally find adenomatous growths at a distance from and below the cancer, which are obviously confined entirely to the mucous membrane. In a case of widely diffused adenomatous growth of the rectum—which I saw with Dr. Gordon and was the most extensive I have ever seen—a hairball, composed apparently of the patient's own hair which she had swallowed, was also present.

Fig. 4.—Commencing adenoma of the rectum from a case of prolapse, probably due to friction against child's clothing. On the left the healthy mucous membrane has been cut horizontally and on the right vertically; the section also passes through a solitary lymph follicle. Photomicrograph by Professor Scott (x 5).

Lastly, in a case recorded by Belleli,¹ the ova of bilharzia were found in one of these growths removed from the rectum,

which suggests the possibility that the liability of children to suffer from intestinal worms may explain the greater frequency with which simple adenomata are met with in early life.

Fig. 5.—Prolapsed adenoma attached by a narrow pedicle.

The first appearance of an adenoma is as a wart-like projection from the mucous membrane. If this is examined microscopically, it is found that the secreting follicles have become elongated and increased in number, and that the projection is caused by their being crowded together. This nodule soon becomes more prominent and rounded, while its base becomes narrowed into a pedicle producing the so-called "polypus" of the rectum. This word as used to express a tumour attached by a single more or less narrow pedicle has always appeared to me to be one of those etymological conundrums which we so frequently meet with in medical history, and which it is high time to replace by a more exact nomenclature. The pedicle once having formed tends to elongate, so that a growth which originated some distance up the rectum may eventually come to be extruded from the anus. This pedicle is sometimes thin and round, while at others it is broad and strap-like. It consists only of the mucous and sub-mucous coats of the bowel with the vessels for the nutrition of the growth.

Fig. 6.—An adenoma of the rectum attached by broad pedicle, and with surface much tuberculated, to the left seen in section, half natural size. Case seen with Mr. Swan.

In the large majority of cases pedunculated adenomata are single, but occasionally they are multiple, and in rare instances large tracts of mucous membrane are completely covered with them. The shape of a simple adenoma is usually more or less globular, but it frequently manifests a tendency to increase its surface by tuberculation, while in others the surface area is still more largely increased by more or less deep divisions; under these circumstances, these papillary adenomata become what have been usually described separately as villous tumours, but an examination of a large number of specimens will show that there are all possible gradations between the simple ovoid and smooth-surfaced adenoma and a villous tumour with a pile almost as fine as velvet, it is more accurate, therefore, to consider all these tumours as varieties of adenoma.

Under the term congenital sacro-coccygeal tumour, a number of entirely distinct growths have been described, and in many of them the characters and method of origin are widely distinct; amongst these may be mentioned (1) tumours originating in connexion with the termination of the spinal canal; (2) dermoids, in some instances apparently due to

Fig. 7.—Multiple adenomata of rectum, prolapsed through anus. Mr. Swan's case.

implantation of epiblast during the disappearance of the fetal tail; (3) tumours containing more highly-specialized tissues evidently due to fetal inclusion; and (4) growths which, although frequently somewhat complex in character, show distinct evidence of having originated in adenomatous tissue. It is with the last class alone that we have to deal upon the present occasion; and, as pointed out by MM. Hermann et Tourneux,² the most plausible theory for the origin of this adenomatous tissue is a failure in the complete obliteration in one or other of those remarkable embryonic structures, the neurenteric canal or the post-anal gut. As indicating their origin, it is convenient to speak of them as embryonic adenomata.

Fig. 8.—Rectal adenoma much split up. Dr. Earl's case. ($\times 3$).

Although in some instances these tumours are directly connected with the rectum, in the majority the relation to the coccyx and sacrum is much more intimate, and the tendency is for the direction of greatest growth to be more frequently outside than inside the pelvis, while in some the growth appears to be entirely extrapelvic. I have, however, seen one case in which the tumour was altogether within the pelvis, and at the age of 2 years had increased so much in size that it had produced intestinal obstruction and retention of urine by direct pressure, although the external enlargement was but little noticeable. I removed this tumour with considerable difficulty, but it recurred and grew with great rapidity, proving fatal in two months, and at the necropsy we found metastatic tumours of similar character both in the liver and lungs, although the local recurrence did not infil-

trate surrounding structures in the way that is so characteristic of adeno-carcinoma.

Fig. 9.—Rectal adenoma very finely split up. Photomicrograph by Professor Scott ($\times 5$).

The surgical treatment of these cases of embryonic adenomata, except when of very small size and extrapelvic, is not satisfactory.

Fig. 10.—Same as Fig 9 ($\times 100$).

The symptoms of simple adenoma of the rectum when of small size and not involving the sphincteric zone are of a trivial character; when, however, the pedicle becomes sufficiently long to allow of the growth being protruded through the anus, it becomes congested, and the surface is liable to be abraded; bleeding is therefore a common symptom. It is a clinical maxim that haemorrhage from the rectum in young children always raises the suspicion of adenoma, as piles, which are the commonest cause of such bleeding in the adult, are excessively rare in early life. Another symptom which is common where the adenomatous growth is extensive is the discharge of glairy mucus. In cases of villous adenomata this may be very considerable, causing frequent desire to evacuate the bowel, and even escaping almost continuously, causing much discomfort to the patient. This abundant formation of mucus is due to the great increase of secreting surface, and is remarkable as showing that the adenomatous tissue of the new growth remains functional. The mechanical effects produced by pressure of unusually large adenomata of the rectum occasionally give rise to important symptoms such as intestinal obstruction and retention of urine; they have also been known seriously to obstruct parturition; but usually, except in embryonic adenoma, the size is so inconsiderable that pressure effects are trivial. In other instances, when situated some distance up the bowel, the continued

peristaltic action evoked has given rise to intussusception or prolapse.

Fig. 11.—Same as Fig. 9 ($\times 300$).

Adenomata sometimes of considerable size occasionally undergo spontaneous cure, when the pedicle becomes long enough to permit of extrusion at the anus the retraction of the bowel after defaecation tears through the thin pedicle, but whether like cutaneous warts they disappear without any apparent cause we have no knowledge.

Fig. 12.—A case of extensive embryonic adenoma. (I am indebted to Mr. Heuston for the opportunity of seeing and reproducing this remarkable case.)

Treatment of simple adenoma consists in the removal of the pedunculated forms after ligature of the pedicle, and when this is at all broad and strap-like it is a wise precaution to transfix and ligature it in sections, the sessile varieties, especially if there is any tendency to infiltration of the deeper structures, are best excised. Where a considerable area is covered by villous growths they may be removed with the curette in the same way that venereal warts are so successfully dealt with.

REFERENCES.

¹ *Progrès Médical*, No. 30, 1885. ² *Comptes Rendus de l'Académie des Sciences*, 1887.

The Lettissomian Lectures

ON THE CONDITIONS WHICH MODIFY THE CHARACTERS OF INFLAMMATIONS OF THE SKIN, AND THEIR INFLUENCE ON TREATMENT.

Delivered before the Medical Society of London.

By H. RADCLIFFE CROCKER, M.D., F.R.C.P.,
Physician to the Skin Department, University College Hospital.

LECTURE I.—(Abstract).

INFLAMMATION OF THE SKIN.

THE lecturer began by stating that it was just about a century ago that Dr. Robert Willan issued his treatise on inflammations of the skin, founding his classification of them on their most prominent clinical feature, dividing them into papular, scaly vesicular, bullous and pustular forms.

Inflammations of the skin comprise more than half of all skin cases, six out of every ten patients having some form of dermatitis, and of these five-sixths come under eczema, psoriasis, impetigo contagiosa, lichen planus, erythema, and urticaria in hospital practice, but in private practice there are a very few impetigo contagiosa, and twice as many of lichen planus.

The inflammations set up by irritants differ according to the strength of the irritant. A strong irritant will set up a dermatitis in any one exposed to it, and its character is usually recognizable, and perhaps even the kind of irritant which was the cause of it. Examples were shown of the crowded vesicular eruption on the palms from the dye called "aurantia"; an irregular bullous eruption from the application of a caustic liquid; Roentgen ray burns, the latter being characterized by the obstinately unhealing character of the ulceration produced, and by the close network of dilated vessels over the whole injured area.

The mild irritants usually require a special vulnerability on the part of the patient, and the eruption produced often resembles an ordinary inflammation of the skin such as an erythema or an eczema, and the cause is often not ascertained unless it is several times repeated, and always commences in an exposed part. Occupation eczemas, such as those of bakers, barmaids, french polishers, etc., are the type of this kind of dermatitis, and frequently inflammation, starting at the irritated part, develops on distant parts, often symmetrically. Vulnerability to certain irritants once acquired often increases till the very slightest exposure is sufficient to bring on an attack. Iodoform dermatitis was given as an example, and it was pointed out that handling the gauze was enough to start it in the predisposed.

ECZEMA.

In discussing the pathology of eczema the papulo-vesicular type was taken, and of it the pathology is still a matter of dispute, and probably the safest line was not to ask, Is eczema parasitic? is it a blood dyscrasia? is it a 'neurosis'? but to acknowledge that all these were factors and to endeavour to estimate in what proportion each played its part in any particular case. Once the inflammatory process was started pus cocci, either the staphylococcus aureus or the streptococcus pyogenes, might, and often did, modify considerably the character of the inflammation, in some cases by the cultivation into virulence of a previously harmless organism, in others by the secondary invasion of one or other of these pus cocci. The change of a vesicular into a pustular eczema was instanced. The following list of inflammations due to the staphylococcus aureus was given:

- Boils.
- Carbuncles.
- Coccogenic and lupoid sycosis.
- Impetigo of Bockhardt.
- Quinquand's "folliculitis decalvans."
- Dermatitis papillaris capillitii.
- Pemphigus neonatorum.
- Pemphigus contagiosus.
- Cutaneous abscesses.
- Superficial whitlows.
- Erysipelas.
- Granuloma pyogenicum and other papillary growths
- Acne varioliformis.