

of this being the most frequent seat of chronic ulceration. Add to this the fact that there are many more tissues and structures to which these points may become adherent, thus causing a greater fixation and still more dragging during peristalsis, and we have a fairly reasonable hypothesis.

The occurrence of gastric ulcers in corresponding locations of the anterior and posterior surfaces has been noted by Mayo,¹ Fenwick² and others, but we think sufficient stress has not been laid on this point. In recurrent ulceration after medical cures the tendency has been to consider this recurrence as of the same ulcer, which has, therefore, been made an argument for surgical intervention. We think this so-called recurrence has frequently been the development of a symmetrically placed ulcer rather than the breaking down of the scar of a medically cured one. We have found symmetrical ulcers or scars in 37 per cent. Thus medical treatment is seen to be more efficient than often considered.

As regards multiple ulcers and scars without reference to relative location (symmetry) statistics vary between 19+ per cent. (Fenwick) and 28.5 per cent. (London Hospital). We have no doubt but that more careful postmortem inspection would increase these percentages. Thus in the pathologic institute at Kiel 10 per cent. of multiple ulcers and scars were ordinarily found, while under careful observation scars were found sufficient to raise this figure to 20 per cent. Certain ulcers tend to become chronic. The chief factors in this class are anemia, hyperacidity, location and adhesions of the stomach wall over the ulcer to surrounding tissues or structures.

Of the 100 specimens 82 were chronic, 13 were acute and 5 could not be determined. As regards the thickness of the edges; it was increased in 74.3 per cent. in the chronic ulcers; while in the acute in 13.3 per cent. Besides the thickening of the edges another characteristic was early noticed. In 45+ per cent. of all acute and chronic ulcers the edge nearer the cardia was sloping while that nearer the pylorus was undermined. Only a single ulcer located in the cardiac part was sloped and undermined in this way. Considering the pyloric part as a grinding organ with a peristaltic action and current directed toward the pyloric opening the above noted fact is significant. Further, of these ulcers the greatest tissue destruction resulting in perforation was in the base nearer the pylorus in 28.9 per cent. In the remaining 55 per cent. of all the ulcers the edges were irregularly abrupt, undermined or sloped.

Considering ulceration as to the amount of tissue destroyed, we have made the following classifications. The stomach wall was perforated in 34.6 per cent. The wall was destroyed and the liver, pancreas, or both together, formed a wall for the opening in part or completely in 27.8 per cent. In a few cases, 4.9 per cent., an inflammatory mass of fibrin, fat and lymph glands had prevented free perforation.

The question of fibrin on the peritoneal surface is an interesting one from a diagnostic standpoint at operation. Mr. Mayo Robson considers the presence of fine flakes or shreds of fibrin on the peritoneal surface of the stomach without discoverable cause in neighboring organs as strongly suggestive of gastric ulceration. We, therefore, observed this point closely, and found of all simple ulcers without perforation or adherent surrounding organs, fibrin flakes or shreds on the peritoneal surface in 74.3 per cent.

Of the 100 cases the causes of death were noted in 55; 25 died of hemorrhage, 30 of peritonitis. Dividing these as to age and sex the following points were observed. Of the 25 who died of hemorrhage, 19 were males and 6 females. Of the 30 dying of peritonitis 8 were males and 22 females. Apparently males die more frequently of hemorrhage and females of perforation and peritonitis. Analysing these further as to age, we found of the 25 of both sexes dying of hemorrhage, all except one female, were thirty years of age or over. As regards the age at death in peritonitis, one male and fourteen females died before thirty years of age, after thirty years of age the contrast is less striking, six males and nine females dying of peritonitis. From these observations it appears that males are more likely to die of hemorrhage after thirty and females of peritonitis before thirty years of age.

In conclusion:

1. Seventy-three and three-tenths per cent. occurred on the lesser curvature or posterior surface.
2. The stomach rotation during digestion, and the adhesions are partial explanations of this fact.
3. Ulcers or scars were symmetrically placed on the anterior and posterior walls in 37 per cent.
4. Fibrin shreds were found in 74 per cent. on the peritoneal surface of simple ulcers.
5. Males with gastric ulceration die most commonly after thirty years of age from hemorrhage; females before thirty of perforation and peritonitis.

LESIONS PREDISPOSING TO CANCER.*

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It is difficult to avoid bringing into a paper of this kind the cause of origin of cancerous growths, since cause and prior lesion are so intimately related. Without some sort of stimulus or disturbance of cell relation many of the lesions would never become malignant. Whether a group of cells has been left out of place in fetal life and ready for aberrant growth, or gets misplaced later, can make no great difference for the purposes of this paper, but the latter occurrence seems best to harmonize with the facts. That mechanical, thermic, actinic, chemical, and perhaps local toxic influences often seem the positive exciting cause of malignant development can not be doubted. What the element is in cell relations that holds the balance in so many cases and loses its control in a few, we do not know.

Of all skin lesions tending to cancerous development there are none that rank so high as the rough, horny, scale-crusts, irregular points and patches, varying from pinhead to all sizes and shapes seen on the face, neck and hands. These occur so frequently on the thin, red, florid skin of people who are either red-haired, or have the "red-haired" type of skin, as to become a definite feature. The crusts are usually composed of small, horny cell masses; the skin beneath may show a bit tender, or it may be slightly thickened and irregular. Later, one or more points take on typical epitheliomatous changes, cell growth, infiltration, erosion, crusting, fissuring, ulceration. Often there are numerous epitheliomata on the one subject; but a majority of people go through life with their "scaly spots" better or worse, without reaching the malignant stage; hence radical treatment for these must await such development.

3. Fenwick: Ulcer of the Stomach.

* Read before the Medical Association of Georgia, at Augusta, April 20, 1906.

Closely related to the above, or occurring with it, is the oily, seborrheic skin with points, discs or patches developing in a greasy surface, and showing greasy scales and, sooner or later, erosions, new growth, finally the epithelioma in full development. These two kinds of skins and lesions more frequently show multiple epitheliomata. Warty, flat, roughened patches, as of the "senile skin," often form the starting point of cancer. A persistent fissure of the lip may be the origin of epithelioma. Scars, as from burns, caustics, x-rays, incisions, boils, carbuncles and various injuries present a condition of cell displacement favorable to malignant growth.

A lesion from the pinch of a cracked and foul pipe stem has caused death from cancer of the lip. Phimosis and balanitis at times result in epithelioma. An innocent-looking epulis may prove not a fibroma, but a sarcoma.

Lupus erythematosus has been known to degenerate into cancer. Lupus vulgaris scars often so change. An apparently innocent wart may become malign, as may keratoses from long continued use of arsenic. Keene¹ in his paper before the American Medical Association two years ago insisted on the latent dangers in, and the removal of all moles, but was convinced of the impossibility of getting consent of the patient to such radical prophylaxis. My own observation is that few moles undergo cancerous change; but when they do, especially those of the pigmented type, their malignance and metastases may be horribly complete; their termination fatal.

The pigmentary type of malignant disease is the product of many lesions. A mole accidentally burned, and so being transformed into malignancy, is recorded by Crocker.² Johnston³ reports cancer developing in a mole on the thigh; another on the back; another on the shoulder, and one on the abdomen. Following injury near the nail, a swelling, dark fluid discharge, pigmentary deposit in the growth—"melanotic whitlow"—may develop.

"Malignant freckle" spot on foot or leg may end in pigmentary cancer. Melanotic rodent ulcer or melanopithelioma is another form. Melanoma of the eye has its usual beginning in a choroidal pigmentary spot.

It is often impossible to diagnose the type of these growths accurately without the aid of the microscope. Metastases of pigmentary cells are often extensive, the lethal end certain. Early and free surgical removal offers the only cure.

Wilfred Fox⁴ considers most cases of melanoma as nevocarcinoma. Johnston found both types, nevocarcinoma and nevosarcoma; Fox, at variance with Johnston, convicts the pigment of the chief activity in cancerous change.

Cases under x-ray treatment for epithelioma often show partial, possibly complete destruction of the original disease with extension, or new development of disease in the scar or its borders. Skiagraphic x-ray burns and the burns of x-ray workers have time and again gone on to epithelioma and death. McLeod's case of a lupus-x-ray scar with cancer forming in its middle is striking.

Suppurative, broken down sebaceous cysts, or even the unbroken cysts, may be transformed into cancer.

A small injury of the tongue from a jagged tooth, and continued irritation, have sufficed to bring on cancer of that organ. A similar development may follow a

syphilitic gumma. So with leucoplasia, the white spots and bands called "smoker's patches." Constant irritation of a tonsillary, pharyngeal, or esophageal lesion may terminate in the same way. Many cases of cancer of the stomach follow an ulcer; many of the gall bladder succeed erosions from biliary calculi. Ovarian cysts may so degenerate. Uterine myoma is not always benign. Cervical scars from old lacerations frequently form the starting point of cancer. Leucoplasia of the vulva often undergoes malignant change.

No adenoma of the breast is safe left in its place. The cicatrix from abscess of the breast has been sufficient to furnish the origin of cancer. Paget's disease of the nipple, which may possibly be confused with eczema, is usually cancerous in nature and progression.

Sufficient examples have been given and time and space are already too far exhausted to permit of an extension of the list.⁵ In unnatural lesions and growths, in scars and irritated erosions, in parts subjected to continued injury, we have a loss of cell balance, an absence of normal restraint, and the scene laid for the entrance of the unknown element that determines the onset of carcinoma, sarcoma or endothelioma, all malignant.

To urge on people the dangers in lesions and growths not yet malignant will often be of no avail. In many cases the malignant change may never take place, but every effort should be made to cure irritated lesions and to remove irritant agents in the simple cases; and no growth certainly progressing towards cancerous evolution should be left untreated. On the slightest occurrence of symptoms tending to these changes, instant and thorough treatment must be instituted. Often the simplest erosion, smallest scirrhous or most minute irritated mole or other growth may liberate cells that wander away to form metastases of the most formidable character. It is proper to watch some cases without interference, and criminally negligent or ignorant to advise the patient to "let alone" any lesion or growth already showing signs of malignancy.

I have used the term cancer in its broad sense, to cover all types of growth whose tendency is to progression, insidious diffusion, recurrence after treatment, certain death without treatment, often death in spite of treatment.

REPORT OF CASES.

A few illustrative cases are here reported:

CASE 1.—Mr. Q., aged 59, cut with a razor a large, flesh-colored mole on his left cheek eight months before consulting me. The microscope showed epithelioma. It was excised. Permanent recovery.

CASE 2.—Mr. C. had a fungating and eroded pigmentary lesion on the top of left shoulder. There had been a dark mole there for years. It was irritated by suspenders. The man recovered after prolonged caustic treatment and protection.

CASE 3.—Mr. M., aged 66. A diagnosis of melanocarcinoma of dorsum right foot was made. Forty years previously a black dot of pin-head size appeared just to the right of the great toe's extensor tendon. There was slow peripheral growth for twenty-five or thirty years; then it increased more rapidly, especially in the last three or four years. When seen, the lesion was two by two inches in size, with various shades and degrees of pigmentation from brown to black or bluish. There was some thickening, and in parts it was finely papular. There were burning sensations when warm in bed. The man declined excision and received no treatment. About a year later part of the patch was elevated and exuding serum, but still there was no metastasis. The man died within a year or two of general diffusion of the disease.

5. See, in this connection, Hyde and Montgomery: "Diseases of Skin," 1905.

1. THE JOURNAL A. M. A., July 9, 1904.

2. Crocker: "Diseases of Skin," 1905.

3. Johnston: Jour. Cut. Dis., Feb., 1905.

4. Fox: Brit. Journ. Derm., March, 1906.

CASE 4.—Mr. A., aged 77, had had more or less epithelomatous trouble for fifteen years. Skin of face, neck and hands showed many scaly points and spots and scars of excisions, etc. When seen he had a fungating epithelioma of the left zygomatic malar arch and bone, growing to bones beneath. On the right maxillary ramus there was another large one. On the left lower eyelid there was a small hard epithelioma with erosion and crusting. Treatment was purely palliative. The case was incurable. Cases like the above and the one to follow are the more numerous in records.

CASE 5.—Dr. —, aged 53. Usual florid type. There was in a crusted lesion on the left cheek, a typical cutaneous horn, beneath—an epithelioma, surrounded by greasy scales. On the end of the nose there were waxy sebaceous accumulations, with flat epithelomatous development in a small colorless mole which had been present for years. Caustic potash treatment was given.

CASE 6.—Mr. —, aged 62. The prepuce was long and had never been retracted. There was a fungous epithelioma, cauliflower like, of the glans. Urine was passed through a crevice in the side of the mass. The inguinal glands were small, hard and hyperplastic. The patient refused to permit their removal. The penis was amputated; a one-inch stump was left. The man was well and at work at last report.

CASE 7.—Mrs. W., aged 40, had a discoid epithelioma on right side of tongue from tooth erosion, constantly kept up. It was thoroughly destroyed with Paquelin cautery. She was well at last report, three or four years later.

CASE 8.—Mr. S., aged 42. The jolt of a car caused him to bite the right side of an already tender tongue. In three months there was extensive involvement of side of tongue and glands of neck. The tongue lesion was not benefited by x-rays. The neck disease was benefited, but the patient died three months later of exhaustion and a hemorrhage from neck.

CASE 9.—Mr. G., aged 52, several months before consultation pinched his lip with pipe stem. A pin-head lesion followed which the patient often picked off. Each time it returned larger, finally ulcerating and became a typical epithelioma of the right half of the lower lip on the carmine border. There was early involvement of submaxillary glands. The case was aggravated by the patient's use of some caustic paste. When first seen over half of the lower lip down to the gum was destroyed; there was involvement of the right oral angle and massive metastasis to lymph glands. From the first he refused all operative treatment. He died in about twelve months from beginning of disease.

CASE 10.—A married woman, under 40, three months pregnant. There was a papillomatous cyst of right breast, becoming cancerous. The breast was amputated. Recovery.

CASE 11.—An old woman was seen in consultation. She had incurable carcinoma of the left zygo-malar-maxillary region which had developed in a sebaceous cyst of many years' standing.

CASE 12.—Mr. C., aged 69, had sarcoma of right shoulder girdle, which had developed three months previously in a dark mole over the right scapular spine. It grew rapidly in three or four weeks to the size of a small orange. It was excised by his attending physician, but recurred, and gradually involved the whole shoulder and the axilla. The patient died within six months.

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Criminal Abortion; Feticide; Prevention of Conception.—In a paper published in the *Texas Courier-Record of Medicine*, January and February, 1906, Dr. H. C. Ghent, Belton, Texas, discusses these questions and presents the opinions obtained from a number of prominent physicians from all parts of the country. The paper discusses this very vexed question thoroughly, but does not offer a solution of the problem. No phase of the subject is left untouched. The moral, physical, medical, mental and legal questions usually propounded in a discussion of abortion, the status of the fetus in utero, the reasons often assigned as justifying abortion, and the duty of the medical profession in checking the evil are discussed fully.

THE INJURIES OF INDEPENDENCE DAY. AND WHAT HAS BEEN ACCOMPLISHED IN BALTIMORE TOWARD LESSENING THEM. A FURTHER CONTRIBUTION TO THE SUBJECT.*

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At the last Atlantic City session of this Association I presented a paper on the subject of the eye injuries of Independence Day, a paper which, I believe, was the pioneer communication on this subject before a body of medical men. Thanks to the admirable work of *THE JOURNAL* of the Association, I was able to gather much valuable information bearing on this subject. The very fact that three years ago on July 4 nearly five hundred persons were killed, twenty-five individuals were made totally blind, and ninety-five others lost an eye apiece indicates that there is something radically wrong and strongly suggestive of lawlessness in our American civilization. The subject has especially interested me, for every year I have had brought to my notice cases which illustrate forcibly the great folly of the popular way of celebrating our Independence Day.

For example, on July 4, 5 and 6, 1888, there were sixteen cases of eye injury treated at the Presbyterian Eye and Ear Hospital, and on the same days of 1897 there were fourteen cases treated, and in the intervening years there was an average of six cases for every Independence Day. Now and again there has been an outbreak of what might almost be called an epidemic of this class of injuries. For instance, on July 4, 1898, we had a record of fourteen cases at the Johns Hopkins Hospital. In 1899 there were sixteen cases treated at the Presbyterian Hospital, and in 1901 thirteen cases. It should be remembered, too, that a certain number of cases are treated in other hospitals in the city, and then, again, a certain number are treated by other physicians in their private offices. This number would, no doubt, be multiplied many times if the record of every case could be reached. On July 4, 5 and 6 eighty-four cases of this character were observed at the New York Eye and Ear Hospital, a year later forty-two were treated, and in 1905 twenty-two were treated. In 1904 there were sixty-nine cases treated in the leading eye hospitals of New York City. I have collected nearly 500 cases of eye injury, more or less serious in character, caused by the explosion of fireworks, and all these occurred within the last few years. Two hundred and fifty were seen in Baltimore. This may seem a large proportion for Baltimore, but my records go back further in the case of Baltimore than they do in the case of either New York or Philadelphia.

Of these cases, 357 were children and 100 were 21 years and over. There were 3 cases where the child was 3 years old, five cases where the age was 4, seven cases where the age was 5, one case where the child was 2½ years old, and an infant of 3 months. I have gathered enough information to show that some variety of fire-cracker was usually responsible for the injury, particularly for the very serious ones. Sky rocks and Roman candles, however, were not found to be blameless. The chief injury was one in which at the same time the lids, conjunctiva and cornea were peppered with grains of powder which was usually found imbedded in these parts, and this injury we all know entails considerable suffering and frequently leaves permanent scars. Of these there were 269. In forty cases the injury was

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.