

mention that many observers assert that they have detected encapsuled coccidia in these cases, and the dispute as to the existence of these bodies and their relation to cancer must be fresh in your minds.<sup>12</sup> Paget met with fifteen instances of it affecting the areola, all of which seemed to be ultimately followed by cancer. The growths are said to be generally of the ordinary scirrhus variety, though some are of the nature of that peculiar disease of the breast known as "duct cancer," and others appear to have originated actual epithelioma of the nipple, with ulceration and destruction of it. I may add that the affection is an uncommon one, and by no means invariably followed by scirrhus of the breast. I was quite surprised to find notes of only five undoubted instances of it out of the 353 cases of carcinoma at our hospital. Finally, I may add that (1) the disease is variable in its progress; (2) that it is not in a few months, or even of necessity at all, followed by cancer of the breast. You may conclude, if you meet with such a case, that you are justified in looking upon it as a most important predisposing cause of carcinoma; and if it resists the ordinary remedies for eczema, and especially if you feel thickening of the skin or subjacent parts, you are justified in advising removal of the whole breast and affected integument.

*Ulceration and Destruction of the Entire Nipple from Chronic Malignant Dermatitis (?)*—A married woman, aged 62, who had nursed and suckled a numerous progeny, was admitted into St. George's Hospital on April 21st, 1885, suffering from ulceration of the left nipple. The nipple and parts around it had been sore and painful for over four years. The left nipple had entirely disappeared, and in its place was a circular ulcer about 2½ inches in diameter, with a circular slough at the bottom of it. The edges of the ulcer were very hard and indurated, and there were hard and enlarged glands in the axilla. The whole breast was removed when it was found that the disease was typical carcinoma. It is questionable whether in this case the ulceration preceded the cancer or was caused by the contraction and pressure of the scirrhus beneath, cutting off the blood supply to the nipple.

#### AFFECTION OF THE SKIN.

Implication of the skin in early carcinoma, if properly weighed and appreciated, is of the utmost value and importance. First, you must carefully discriminate between the puckering and dimpling of the skin caused by the contraction of the cancer pulling upon the fibrous suspensory bands which pass from the gland septa to the integument, and that peculiar coarse puckering of the skin which is seen when the cancer is close to the integument and commencing to infiltrate it. The French authors term this latter appearance *peau d'orange*, and in this country writers on surgery have well likened it to the dimpling seen upon a coarse pigskin saddle. So far as I have seen, this kind of appearance of the skin, with adhesion to the tumour below, is not found in anything but scirrhus cancer. But authors of repute describe it in chronic mastitis and in gummata. It is otherwise with the deep dimple or pucker of early carcinoma.

While this, especially in fat mammae, may be the earliest sign of the disease, you must remember that a very similar appearance is found in an old abscess which has burst and discharged, in shrivelled cysts, or as the result of operations for removal of small adenomatous tumours. If a hard tumour forms in the mamma, and is early associated with a dimple or 'pucker' in the skin, it is almost certain to be carcinoma. Lastly, I will draw your attention to the all-important fact that rapidly-growing cancer may not pucker the skin over it in the least, for it contains but little contracting fibrous tissue. This is well illustrated by the following case:—

A woman, aged 63, was admitted into St. George's Hospital on June 5th, 1895, and was the subject of consultation, on account of a deeply-seated tumour the size of a walnut in the right mamma. She was the mother of four children, but could not suckle with the right breast on account of a poorly-developed nipple. She had noticed the tumour for five or six weeks. The growth was deeply situated in the upper part of the right breast. The nipple was not retracted; the skin was not implicated in any way. On pressure over the growth a sense of elasticity was elicited, and most of the opinions were rather in favour of it being a cyst. On June 6th an exploratory incision was made by Mr. Pick. The tumour was a firm carcinoma, but devoid of the hardness and contraction of scirrhus. It lay upon the pectoral fascia in the deeper layer of mammary tissue.

#### ENLARGED GLANDS.

Hard, stony glands are common in scirrhus, yet in early cases they are often absent. Do not look upon their absence as proof that the disease is innocent. Hard glands in the

axilla are present in a variety of breast affections, especially tuberculous disease, syphilitic chancre, and some cases of inflammatory mastitis. In obese individuals you may easily miss enlarged glands, hence the importance in operating upon such cases of opening the fascia and carefully examining for them. I would even go farther, and say that to be accurate the microscope can only determine whether glands are affected or not by carcinomatous deposit.

#### EXPLORATORY INCISION.

When you make an exploratory incision, you will at once appreciate the sudden hardness and resistance offered by even a small nodule of scirrhus to the scalpel; you will see the section is white and glistening, like a section of unripe pear, that the hardness fades off into the surrounding tissues, which are drawn together and contracted. The surface is sometimes covered with little yellowish puncta, from which, on squeezing, accumulation of *débris* of cells emerges, with abundant juicy exudation. There are often small hæmorrhages. "Creaking" of the tissue on section, and concavity of the cut surface, can hardly be appreciated in a nodule of scirrhus the size of a nut embedded deeply in mammary tissue. I would urge you to make yourself thoroughly acquainted with the appearance of freshly cut scirrhus. You will soon learn that exploratory incision is far and away the most reliable guide in cases of doubt, but unless you know what you see, it will avail you little. Never turn to a friend and say "What do you think of that?" Act entirely upon your own responsibility and knowledge. Do not be content with a timid and insufficient incision. Cut well into the suspicious part, and let your assistant evert the wound; sponge away blood from the cut surfaces, and examine the area carefully and deliberately.

#### CONDITIONS LIABLE TO BE CONFOUNDED WITH EARLY CANCER.

Such being the estimation you should hold of the various diagnostic points connected with early cancer, you will have gathered that there are a variety of affections you may easily confound with it. These may be tabulated as follows:

1. Inflammatory conditions, chronic mastitis, acute mastitis.
2. Abscess.
3. Cysts of various kinds.
4. Other tumours, as fibro-adenoma, sarcoma, or gummatous formations.
5. Phantom tumours.
6. Some rare conditions of the skin of the breast, as keloid and syphilitic affections.

### HÆMORRHAGES: THEIR RELATION TO BAROMETRIC PRESSURE.

By THOMAS WHITELAW, M.D. EDIN.,  
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My object in this article is to draw attention to a symptom that in diseased conditions of the system may appear coincidentally with an abnormally high barometric pressure.

We have had many contributions to the literature bearing upon health as it is affected by the weather; but there is, perhaps, none of more scientific value than that which appeared in the Scottish Meteorological Society's *Journal* of April, 1874, by Mr. Alex. Buchan and Dr. Arthur Mitchell on the Influence of Weather on Mortality from Different Diseases and at Different Ages. Though this paper is beyond praise, there is yet no allusion to the influence exerted by the atmospheric pressure upon the course of disease. In the same Society's *Journal* of April, 1891, there is an article, *Death-rate and Temperature*, by Mr. Gibbins, of Kettins, but no reference to the readings of the barometer. In the most recently published book on meteorology with which I am acquainted, *Meteorology, Practical and Applied*, by Dr. J. W. Moore, there are several chapters on the relation of weather to disease, but there is silence in regard to the state of the barometer as affecting disease, except at p. 364, where the author says: "The coincidence of a high barometer with a great development of cholera has often been remarked, but striking exceptions are also on record." In the course of this writer's introductory remarks on "Acute Infectious Diseases," he states at p. 358, "In my remarks on the influence of season and weather on disease, I shall confine myself almost exclusively to those meteorological factors—mean temperature, rainfall, and humidity; of these, the first

<sup>12</sup> This disease is, in exceptional cases, observed on the scrotum, and I saw a case of this nature at the Dermatological Society some years since, under the care of Dr. Crocker.

is the most important, as it is in truth the resultant of many other factors."

My attention was attracted by the repeated coincidence of what are called "colliery warnings," appearing in the daily papers, with urgent messages to attend patients attacked with hæmorrhage from the lungs. The coincidences were so frequent that I could not avoid concluding that there was some connection between the one and the other. Time after time cases have arisen either immediately before I saw the "warning" or very often on the day that the public notice appeared. From these notices I naturally turned to the barometer, to learn that in almost every case the pressure of the atmosphere was exceptionally high.

At first my attention was taken up almost entirely by cases of hæmoptysis; but, as the apparent cause began to impress itself on my mind, hæmorrhages, less striking at first, arrested interest. From the observations I have made from time to time during the past few years, I have come to the conclusion that there is a marked affinity between a high barometer and hæmorrhages of various kinds. My earlier notes are missing, but the following compressed particulars of recent cases will bear out my statement as to the close relation that appears to exist between a high barometric pressure and the tendency to rupture of blood vessels that are not in a healthy condition.

CASE I.—J. H. Phthisis. Hæmoptysis for first time on November 20th, 1894. Barometer 30.00.

CASE II.—Mrs. A. Amenorrhœa for three months. Not pregnant. Menstruation resumed on December 1st, 1894. Barometer 30.46.

CASE III.—D. L. Girl aged 9. Purpura rheumatica. Extensive subcutaneous hæmorrhages on December 2nd, 1894. Barometer 30.38.

CASE IV.—Mrs. B., aged 41. Phthisis. A trifling hæmoptysis, began on December 10th, 1894. Barometer 29.77.

CASE V.—Mrs. Z. Pregnant three months. Hæmorrhage set in on December 10th, 1895. Barometer 29.25. Abortion followed.

CASE VI.—Mrs. C., aged 68. Diabetes, paralysis, and sequelæ of influenza. Cerebral hæmorrhage, followed by death within an hour, occurred on April 11th, 1895. Barometer 30.12.

CASE VII.—Mrs. X., age under 60. Arteries markedly atheromatous, probably specific. Cerebral hæmorrhage on April 15th, 1895, followed by death. The barometer stood on that morning at 30.8.

CASE VIII.—W. M. Intestinal hæmorrhage on April 27th, 1895. Disease doubtful. Barometer 29.73.

CASE IX.—Mrs. C., aged 41. Phthisis. Hæmoptysis on May 3rd and 5th, 1895. Barometer 30.6 and 30.4 at the respective dates.

CASE X.—Mrs. G. Slight pulmonary hæmorrhage on May 3rd, 1895. Barometer 30.6.

CASE XI.—Mrs. S., aged 92. Senile degeneration; extensive hæmorrhages beneath skin of face on May 5th, 1895. Barometer 30.4.

CASE XII.—P. M., aged 17. Phthisis; hæmoptysis on May 5th, 1895. Barometer 30.4.

CASE XIII.—A. R. Slight cerebral hæmorrhage followed by temporary paralysis. The patient a man of plethoric constitution, aged between 50 and 60. Date May 6th, 1895. Barometer 30.56.

CASE XIV.—H. W. Phthisis; slight pulmonary hæmorrhage on May 7th, 1895. Barometer 30.51.

CASE XV.—Mrs. A., aged 52. Amenorrhœa for three months (menopause). Period reappeared at end of April, 1895, the loss continuing slight till the beginning of May, when it became copious.

The barometer readings given are only corrected to the temperature of 32° but not to the sea level.

As will be seen from these cases, during the first week of May the readings of the barometer were exceptionally high. It may be raised as an objection to my deduction that the cases quoted are mere coincidences; but when similar coincidences have occurred time after time during several years' observations, the conclusion drawn is a fairly justifiable one. It will be observed, too, that these hæmorrhages are very varied in character, and are consequently more significant.

It is not my intention to attempt to give a scientific explanation of how the atmospheric pressure, when abnormally high, produces such results. My reason for not essaying this task is that I am inclined to the opinion that there are other conditions of the atmosphere which, in concert with that of the atmospheric pressure, act on the body in such a way as to cause an unusual strain upon the vascular system. While I am fully alive to the importance of information upon these other states of the atmosphere, the unravelling of which I must leave to others, I shall consider that the purpose of this paper has been attained should it have the effect of attracting the attention of the profession, especially those members of it engaged in general practice. To the latter, the fact that an examination of the barometer may often warn them of danger that menaces a patient should not be without its value.

It will be observed that there are no cases given bearing on surgical practice; but, if there is a stratum of truth in the subject, the observation should not be uninteresting to the specialist in surgery.

## A CASE OF ROENTGEN PHOTOGRAPHY.

By HOWARD MARSH, F.R.C.S.,  
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THE following case affords so good an illustration of the assistance in diagnosis which may be afforded by the Roentgen method of photography that it seems worth while briefly to record the facts, and to give the pictures which were obtained.

A subaltern, aged 22, was riding, and put his horse at a fence. The horse fell and rolled over him. I saw him three hours later with Brigade-Surgeon-Lieutenant-Colonel Leake and Surgeon-Captain Salvage. As he was becoming (after having been for a time quite conscious) deeply insensible, as his pulse was small and going down towards 50, and as he had been very violently sick, it seemed probable that intracranial hæmorrhage was taking place, and that the case might end fatally. His left arm was evidently severely injured in the neighbourhood of the elbow-joint, but there was so much swelling and blood extravasation that it was not possible to venture a precise opinion as to what lesion had occurred. It seemed probable, however, that he had sustained a fracture of the lower end of the humerus, extending into the elbow-joint. Having regard to the very grave condition of the patient it was agreed that no close examination should be made, but that the arm should, for the next few hours, be merely kept at rest on a splint. The next morning all grave cerebral symptoms had passed off, and his general condition was quite favourable; the arm, however, was then still more swollen, and no accurate opinion could be formed as to the nature of the injury. Under these circumstances it was proposed that a Roentgen photograph should be obtained. This was taken in the afternoon by Mr. T. Moore, of Blackheath, in association with Mr. Webster, F.C.S. The plate was exposed for about thirty minutes, and the photograph was at once developed. Fig. No. 1 was the result, and the existence of an uncomplicated dislocation backwards at the elbow-joint was thus very completely demonstrated. The upper arm was then photographed, the exposure lasting a quarter of an hour, and the picture showed that the shaft of the humerus was entire. The patient was at once placed under chloroform and the dislocation reduced. Photograph No. 2 was then taken, and it showed that the displacement had been completely corrected.

Some regard the Roentgen photography merely as a scientific toy, and it is, no doubt, often employed where it can give no valuable information. Moreover, it is very probable that unless great caution is used in accepting the evidence which it may appear to afford it will lead to either positive or negative conclusions which are erroneous. But in cases of injury of the long bones, and especially of injuries involving the articular ends of the bones, and when it is a question what the precise injury that has been sustained may be, the method will often be valuable in the highest degree.

Many surgeons who would like to use the method may not have the necessary apparatus within reach. In such instances common prudence must suggest a reference to the subject, and an expression of every willingness to promote any feasible plan for procuring a Roentgen picture. The information given by this method may be absolutely conclusive, and may directly contravene the best opinion that the most highly-qualified observer has had it in his power—under the difficult circumstances of the case—to form. With a photograph before him any layman can see what by any other means could be only a matter of probability, balanced by other probabilities of almost equal weight. From a medico-legal point of view the Roentgen photography will clearly play a leading part in cases where surgeons are charged with having overlooked a fracture or a dislocation when no such injury is present.

It will also have a conclusive answer to give in cases in which irregular practitioners charge surgeons with having overlooked a fracture or when they advance the mythical statement that "one of the small bones is out." It would have furnished valuable information to a patient, met with some years ago, who had slight lateral curvature of the spine. This patient was told by a bonesetter that "his pelvis had opened and both his hips were out." The reassurance and