appearance of cartilage, which it loses the instant it is denuded of this membrane.

That the tissue just described is not a layer of cartilage, seems to be clear, from the fact of no corpuscles being found in it; from its extreme and yet uniform softness and tenuity, the latter being so great that the membrane folds upon itself when floating in a few drops of water; from the facility with which it is separated from the surface of the cartilage itself, without the necessity of using any cutting instrument; and, lastly, from the circumstance that it is visibly continuous with the synovial membrane around the joint. The only fact which seems to militate against its being considered as synovial membrane, is the absence from its surface of epithelial cells. The absence of the epithelial layer may, however, be accounted for, perhaps, from the facts that it is not, like the reflex synovial membrane, a secreting organ, and from its being subjected to great pressure; nor can the absence of it be deemed a sufficient reason for denying that the tissue described is synovial membrane, in the face of so many cogent reasons for identifying it with that membrane.

The conclusion to which I have been led is, that all healthy articular cartilage is invested with synovial membrane, which membrane, however, differs from the condition in which it is ordinarily met with, in being deprived of an epithelial layer.

If this conclusion be correct, it will, I think, appear, to those who have studied the diseases of articular cartilage, that it may lead to more precise views than heretofore of the process of ulceration, and the *modus operandi* of that change.

Postscript.—In confirmation of the view advanced in the above paper, it may be added, that at the meeting of the Pathological Society, when an abstract of this communication was laid before its members, Dr. Garrod stated, that upon a careful examination of some specimens, where gouty deposit existed on the surface of articular cartilage, he found this deposit covered by a fine membrane. Dr. Garrod has been so kind as to furnish me with one of his specimens, and having submitted it to microscopic observation, I find that it quite agrees in its structure with the membrane of which the description is given above.

12, Argyle Place, St. James', January 1849.

CASE OF MELANOTIC CANCER OF THE SCROTUM.

By T. B. CURLING, Esq., Lecturer on Surgery at the London Hospital.

EXCISION OF THE MORBID PART—RETURN OF THE DISEASE—DEATH IN SIX YEARS AFTER THE OPERATION.

Mr. G., a cabinet-maker, aged 32, enjoying tolerable health, consulted me in November 1842, on account of a fungous growth on the Scrotum. The tumour was about the size of a small walnut and of a dark colour: it had an irregular granular surface, and was attached to the left side of the scrotum by a narrow peduncle or neck. About an inch on one side of this tumour, I observed a small dark spot, apparently produced by some black deposit beneath the epidermis, raising it a little above the

surrounding surface. The patient stated that the fungous growth was first noticed about three months before, when it resembled the little speck just described, which had been observed only a fortnight. It had increased rapidly of late, but gave no pain. The shirt was discoloured by a slight discharge and bloody marks. There was no enlargement of the glands in the groins. I excised the tumour and small speck near it, including a portion of sound scrotum. On making a section of the morbid growth, the fungus appeared to spring from the cutis. Its base was hard and of a scirrhous character; but the projecting part was soft and easily broken down. Small irregular spots of melanic pigment were observed on the cut surface, as well as on the exterior of the tumour, and the little speck seemed to consist of a similar matter deposited immediately beneath the epidermis. The wound healed favourably and quite closed in a fortnight.

May 31st, 1843, about eighteen months after the operation, I was requested to see Mr. G., in consequence of a return of the disease. On examination, I found three black specks in the vicinity of the cicatrix, on the left side of the scrotum. These had been observed only three or four days. As he complained of uneasiness in the left groin, I examined the part, and found some glands slightly enlarged and indurated. Thinking it possible that the enlargement might not be of a specific character, I directed the *ceratum hydrargyri c.* to be applied. I saw my patient next on the first of the following September. The glands in the groin had then increased in size and were very hard. I afterwards lost sight of Mr. G., until March 11th, 1844, when he called again to consult me. I found a firm indurated mass, about the size of an almond, implicating the cicatrix in the scrotum. There was an enlargement of inguinal glands, forming a tumour the size of an orange, and a smaller swelling the size of a hen's egg just below it. He suffered a good deal of pain in the part, but was able to continue at his occupation. His general health seemed slightly impaired. After this visit, I saw no more of my patient for more than four years.

On the 10th of October last, (1848), I was requested to visit him. I found him lying in bed and suffering a good deal of pain from the tumour in the groin, which had increased to the size of a very large cocoa nut. It was of a rounded form, smooth, soft, and had an elastic feel. The skin covering it was mottled, and of a dark livid colour. The induration in the scrotum had increased very little, but there was a cord extending from it to the inguinal tumour. It appeared that he had continued at his occupation until about three months back, when, after some more exertion than usual, the tumour became more painful and rapidly enlarged, and in a few weeks doubled its previous size. Up to this period he had enjoyed tolerable health, and had latterly gained flesh; but since the attack of pain and change in the tumour, he had become thinner and weaker, and had been confined to the bed or sofa. His stomach also had become irritable, and his digestion impaired. Bowels costive. I ordered the dilute hydrocyanic acid, and opiates at night, which afforded him relief; and the bowels to be kept open by injections or a mild aperient pill.

November 23, I was sent for at 9 A.M., in consequence of his having been seized with severe pain in the abdomen. I found no abdominal

tension nor tenderness on pressure, but about every ten minutes he was attacked with violent pains in the abdomen, attended with straining as if at stool. The pains were always brought on by taking food into the stomach. They had lasted some hours, and distressed him extremely. His countenance was anxious—his pulse quick and thready. His bowels had been relieved the day before. Suspecting that these pains were caused by some tumour developed within the lower part of the colon or in the rectum, and exciting spasmodic action of the larger bowel, I ordered an injection containing forty drops of laudanum, and poppy fomentations to the abdomen, and allowed the patient to take only milk with a small quantity of brandy in it, in spoonfuls. Shortly after the injection, the pains subsided; but they returned after an intermission of six hours, though less violently than before. They were again relieved by an opiate injection, which it was found necessary to repeat on the two following days.

November 25th, I was sent for in haste at 9 P.M., in consequence of hæmorrhage having taken place from the bowels. It appeared that whilst asleep, he was disturbed by a sensation of something having suddenly given way in his inside, which was followed almost immediately by an evacuation. I found that about 12 to 14 oz. of blood had escaped at the anus, which was also blocked up with coagulum. The patient was cold, clammy, and faint. Napkins wrung in cold water were applied to the part, and I gave him some cold brandy and water with a little laudanum in it. No further bleeding occurred for some hours, but he continued to pass small quantities of blood in his stools, and gradually getting weaker, died December 7th. During the last few weeks, the inguinal tumour had remained stationary and caused very little uneasiness.

The body was examined thirty hours after death. The heart and lungs were quite healthy. The liver, spleen and pancreas were also sound. The kidneys were pale and the cortical structure slightly atrophied. A few of the mesenteric glands were slightly enlarged, but not carcinomatous. The lumbar glands were very little enlarged, but quite black. On minute examination, they were found to consist of nucleated cells containing black pigment. The colon was loaded with lumps of hardened fæces, and the rectum was blocked up with fæcal matter, which, at the lower extremity of the gut, was tinged with blood. Near the termination of the anus, there were two superficial ulcers about the size of a fourpenny piece. There was a small portion of carcinomatous deposit, slightly tinged with black pigment, in the cellular tissue of the scrotum, and connected with the cicatrix. The tumour was composed of a mass of carcinomatous matter, of a soft encephaloid character, which, at one part, had nearly made its way through the skin. A good deal of this matter was dead cancer tissue, particularly towards the surface. Some large veins filled with dark coloured coagula traversed the tumour. The abdominal muscles were involved in the disease, but it caused no internal tumour. Below the tumour, but closely attached to it, there was a large carcinomatous gland, which was imbedded in the upper part of the thigh. The skin investing the large tumour was tinged of a livid or dark brown colour.

The case, which I have just related, presents several features of

interest. It may be noticed as remarkable, and as contrary to our experience of the progress of melanosis, that the disease having reappeared at its original seat, and also in the groin, so early as six months after the operation, should subsequently have advanced so slowly, that after lasting six years, the only internal parts affected, were the lumbar glands, and these only in a very slight degree. When the return of the disease was first remarked, I had considered the propriety of excising the diseased portion of scrotum and dissecting out the enlarged gland from the groin; but the results of operations for melanosis have been so discouraging that I was not disposed to suggest a fresh operation at once, and the patient neglected calling on me again, until the disease seemed too fully established in the system to justify any further use of the knife. This case is also interesting as confirming what has been remarked by pathologists in regard to the connection between melanosis and cancer. There was both cancer and melanosis in the scrotum; encephaloid cancer in the groin, and pure melanosis of the lumbar glands. It is a question with pathologists whether melanosis should be considered a carcinomatous disease; and Dr. Walshe, in his work on Cancer, gives no description of it, but briefly states his reasons for not regarding it as a form of cancer. I must, however, dissent from this view. It is true that the most marked character of melanosis arises from the presence of a black pigment, and that it generally originates in parts where black pigment commonly exists, as in the skin and eye. Black pigment may be deposited, also, in parts, independently of any cancerous formation. Nevertheless, I believe that Laennec was right in considering melanosis as a variety of cancer.[1] The detection of nucleated or cancer cells in all cases of true melanosis in which they have been sought for, and the constant occurrence of secondary formations, sometimes of a similar character, at other times of cancer without the pigment, seem to me to establish its claim to be regarded as a genuine cancerous disease; whilst the addition of the black pigment to the cancerous matter, its prevalence throughout the body, and abundant, indeed, extraordinary development in parts where no pigment exists in their healthy state, gives to this form of the disease peculiar characters, well entitling it to be distinguished from other forms of cancer. Carcinomatous disease originating in the skin, such as chimney-sweeper's cancer, cancer of the lip and eyelids, rarely leads to internal secondary deposits; whereas, melanosis commencing in the skin, is so constantly followed by secondary formations in numerous parts of the body, that an operation for its permanent eradication, even at an early period, is regarded as almost hopeless. This, then, is another distinguishing feature, and, as I have already remarked, a peculiarity in the case I have related was the limitation of the melanotic deposit to the lumbar glands. Notwithstanding the naturally dark colour of the skin of the scrotum, this is the only instance of melanosis occurring in this part, with which I am acquainted.

The immediate cause of death was the hæmorrhage from the ulcer in the mucous membrane of the rectum, and it may be doubted whether this lesion was the direct result of the original disease, for which the patient came under my care.

[1] This opinion has been adopted by Dupuytren, Cruveilhier, Müller, and others.