mucus. Constipation and difficult and painful defecation are present in only a few instances; the majority, especially when the disease has been of long standing, suffer from constant diarrhœa. The amount of purulent discharge is excessive, either with or without fecal matter at stool, or involuntarily during the day. Most of the patients lose flesh and strength, and suffer from various dyspeptic symptoms. In nearly all hypertrophied and prominent folds of integument are found upon the margin of the anus. The stricture is invariably found at the depth of about an inch and a half or two inches from the margin of the anus, and does not appear to vary from this position like strictures dependent upon other causes.

The stricture is composed of an indurated and inextensible adventitious deposit in the substance of the mucous membrane and the submucous cellular tissue. It is never impermeable nor so contracted as entirely to prevent the exit of fecal matter. The muscular tissue surrounding the contracted portion is somewhat hypertrophied. There is not the slightest evidence of any deposit similar to that found in gummy tumors.

The lining membrane of the dilated portion of the rectum above the stricture is denuded of its epithelium and glandular layer, giving rise to an extensive and continuous erosion for about four or five inches above the contraction, and the muscular tissue surrounding this portion is hypertrophied. This ulcerated surface is the chief source from which is derived the pus that is mingled with the stools, and flows away involuntarily. Gosselin believes that so extensive an erosion is peculiar to this class of strictures.

Since the last edition of this work much has been written upon syphilitic affections of the rectum, but little has been added to our knowledge of the subject. The chief contribution has been by Fournier,[1] who has published an elaborate brochure, of which the thesis of his student, Godebert, is a recapitulation. Fournier thinks that tertiary lesions of the anus and rectum are rare, and classifies them as *ulcerating syphilides, gummous syphilides*, and a third variety, which he calls *syphilôme ano-rectal*. He subdivides ulcerating syphilides of the rectum into two kinds; those which are continuous with ulcers outside the anus, and extend one or two centimetres, more rarely three or four centimetres, within the sphincter. In one case they reached further than he could see even with the aid of the speculum. Secondly, those which are developed *originally within the rectum*, as multiple ulceration, either in the sigmoid flexure and rectum, or confined to the latter portion of the intestine. He says that these lesions are very rare, although they are probably more common than is supposed, since they are seldom looked for. He has never seen gummous infiltration, but it has been observed by Prof. Verneuil, and he, therefore, considers it another but rare cause of rectal stricture. The third lesion of syphilis, which may cause stricture

[1] Fournier, Lésions tertiares de l'anus et du rectum, Paris, 1875.

of the rectum, is the one upon which Fournier lays most stress. He thinks that most of the strictures in syphilitic persons are caused "*by an infiltration of the ano-rectal walls with a neoplasm of unknown structure, but capable of degenerating into a fibrous tissue, the contraction of which results in coarctation of the intestine.*" In proof of this theory he has no facts derived from post-mortem examination, but, reasoning from analogy, he concludes that since syphilis produces connective tissue hyperplasia in other organs, as the testes, lungs, liver, etc., it may have a similar effect in the rectum. This theory, certainly more than any other, seems to be in accord with the facts. Fournier calls attention to the fact, that at the autopsies of subjects with old syphilitic strictures of the rectum, no ulcerations nor cicatrices can be found; hence, he infers that the morbid changes are submucous rather than in the mucous membrane itself. He admits, however, that contractions from ulcerations do occur, but claims that they are very rare. He thinks also that chronic inflammation may have a modifying influence in the production of stricture.

In this lesion the entire circumference of the rectal wall for a distance of from three to eight centimetres above the sphincter, becomes transformed into a thickened, hard, and unequally rigid cylinder, with no trace of ulceration. When the infiltration is limited to the vicinity of the anus, it is not uniformly diffused around the circumference of the canal, but is circumscribed, forming tumor-like masses, irregularly round or flattened, which are at first covered by healthy tissue. These masses are firm and elastic, and are painless unless they become inflamed; they are liable to erosion and ulceration. These anal lesions are curable if treated early, but if neglected they inevitably result in stricture. It is the opinion of Fournier that these lesions are more common in females than males, in the proportion of eight to one.

We have given an analysis of this valuable paper in order to present clearly the views of its accomplished author. While we agree with him in the main, we are somewhat surprised that he is silent regarding the influence of chancroids in producing rectal strictures.

The views of Fournier concerning *syphilôme ano-rectal* are adopted by Duplay,[1] who thinks, however, that primary lesions and gummata are never the cause of rectal stricture. He says, "The cylindrical and extended stricture of the rectum accompanied by thickening and induration of the walls is a constitutional affection, having in a measure its own proper individuality." He thinks that the irritation to which the rectum is subjected is the exciting cause.

One of the most important contributions to the subject of gummy infiltration of the rectum is contained in the report of a case by Zeissl.[2] The patient was a man who contracted syphilis in 1860, and suffered severely from it. Fourteen years later he came under Zeissl's observation, being much emaciated, and having a large

[1] Duplay, Progrès méd., Paris, nov. 30, 1876.
[2] Zeissl, Vrtljschr. Dermat. u. Syph., Wien, H. II., 1876.

fungous mass growing from the scrotum. The slow, painless course of this lesion suggested its syphilitic nature. While under treatment for this affection the patient complained of pain in the rectum, attended by bloody and diarrhœal discharges; very soon a brownish-black ill-smelling mass was found protruding from the anus, which after removal proved to be composed of connective and elastic tissue. On digital examination a swelling the size of a walnut was discovered on the right wall of the rectum, from which a sanious pus could be expressed. Periostal nodes were also present at this time. Zeissl quotes Virchow as saying that there is nothing absolutely specific in the formation of the infiltrations of syphilis, but that their nature is determined by their development, history, course, degeneration, etc. He concludes that the anal tumor was a syphilitic new growth, and that it was of exceptional importance on account of its occurrence in a male patient. Barduzzi,[1] an Italian, has also published a brochure on the subject of syphilitic stricture of the rectum, which he thinks may be caused, first, by simple ulcers or the chancroid, second by the lesions of secondary syphilis, third by those of tertiary syphilis, and fourth by cancer. His paper also contains a good description of the symptomatology, and some suggestive points in the diagnosis of cancerous strictures.

The literature of this subject has been further increased by the publication by Zappula[2] of a case of rectal stricture, in which cure was effected by the internal use of iodide of potassium. The patient, a man 36 years of age, had gonorrhœa and an ulcer on the glans fifteen years before. Mercurial treatment was at once begun, and no lesion of syphilis subsequently appeared. Fifteen years later he began to suffer from pains to the right of the anus and in the right tuberosity of the ischium. Very soon the symptoms of rectal stricture became well marked, and so extreme was the intestinal obstruction that large fecal tumors formed, and could be felt through the abdominal walls. Upon examining the rectum with the finger, smooth, elastic elevations of the mucous membrane were felt, rather in the form of folds than of condylomata or other adventitious deposits. Examination with the speculum showed the mucous membrane hypertrophied, uniformly swollen, and slightly mammillated. A sound could readily be introduced to a depth of eleven centimetres (four and a half inches), but there met an impassable obstruction. On a second examination there was found at a depth of four centimetres (one and six-tenths inch) a painless swelling the size of a hazelnut, globular, smooth and elastic, which was situated beneath the mucous membrane, and appeared not to adhere to the latter. The diagnosis lay between syphilis and cancer. Giving the patient the benefit of the doubt, he was placed upon anti-syphilitic treatment, consisting of large doses of the iodide of potassium. In the course of

[1] Barduzzi, Gior. ital. d. mal. ven., Milano, No. I., 1875.

[2] Zappula, Ann. univ. di med., Milano, CCXIII., 1870; also, Arch. f. Dermat. u. Syph. Prag., 1871, pp. 62 and 90.

twelve days the pain disappeared, the tumor diminished in size, natural stools took place, and the patient was at last completely restored to health.

According to Fournier, Guérin also obtained good results from the iodide of potassium in rectal stricture.

Treatment.—It has only been exceptionally, as in Zappula's case above given, that the potassium iodide and mercurials have had any effect in relieving stricture of the rectum. Their success, however, in these few instances should lead us to give them a trial in all. At the outset of the disease, dilatation, either alone or combined with incisions, may effect a cure; at a later stage, they are in most cases at best palliative, and a fatal termination can only be delayed for a time by the use of sounds, the administration of tonics, and general hygienic means.

An important modification, however, of the treatment of these strictures by dilatation has been successfully employed by Dr. McMasters,[1] of St. Francis Hospital, New York. The patient was a man twenty-three years of age, who had been infected two years previous. Fifteen months after the primary lesion he complained of symptoms of rectal stricture, which were not treated, and which gradually increased for ten months. When he came under treatment his stricture, which was just within the sphincter, scarcely admitted a No. 12 bougie. After unsuccessful treatment by incisions and dilatation, Dr. McMasters introduced a piece of wood covered with flannel, saturated with mercurial ointment, and so shaped as to exactly fit the stricture. Having been retained for twenty-four hours by means of a perineal band, it was withdrawn, and, after the application of another thickness of flannel, anointed as before, it was reinserted. After daily repetition of this procedure for two weeks, the stricture was large enough to admit the index-finger, and, at the end of five weeks, its diameter was nearly one inch, which was subsequently increased to one inch and three-eighths. The treatment, being continuous, required confinement of the patient. For the first twenty-four hours the wooden plug caused slight discomfort, but afterwards no inconvenience was experienced. Cure was hastened by the internal use of the iodide of potassium.

The Liver.

The liver is attacked by syphilis more frequently than any other of the abdominal viscera. In the *secondary* stage congestion of the liver sometimes occurs, usually associated with a cutaneous eruption. The most marked symptom is *icterus*, which is of short duration and may be accompanied by gastric disturbance and febrile reaction.

[1] McMasters, Treatment of syphilitic stricture of the rectum by means of pressure, and the local application of mercurial ointment. N. York M. J., Oct., 1876.

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There is a sense of weight or oppression in the hepatic region, but seldom any pain, except perhaps on pressure. Percussion may show slight increase in the volume of the organ. This condition, which was first described by Gubler in 1853, is probably due to the extension of a catarrh from the intestine to the bile-duct. The fact that it usually accompanies a specific exanthem, simultaneously with which it often disappears, suggests the possibility of an analogous condition of the intestine. It rarely persists more than a week or two. The icterus occurring at a later period of syphilis may, of course, be due to interference with the transmission of the bile by mere congestion of the liver; more frequently it is caused by compression from a gumma or a cicatricial band.

The affections of the liver observed in the later stages of syphilis are much more serious and present more decided symptoms. Three forms of *tertiary* syphilis of the liver are usually recognized:

1. Chronic Interstitial Hepatitis.
2. Gummata.
3. Amyloid Degeneration.

Chronic Interstitial Hepatitis.—Chronic interstitial hepatitis may be *general* or *partial;* the former condition is rare, and cannot be distinguished from ordinary cirrhosis. In the localized form the increase of fibrous tissue is especially marked in the capsule of Glisson at the attachment of ligaments. The subsequent contraction of the newly formed tissue causes very striking lobulation of the organ.

Upon post-mortem examination the liver is found to be united to the neighboring organs and to the diaphragm by means of ligamentous bands, which are so firm that it is often difficult to remove it from its position. The external appearance is highly characteristic. Its natural contour is often lost, so that its different portions are with difficulty recognized. Its edges are uneven and fissured. Its surfaces present irregular prominences or lobes, separated by furrows radiating for the most part from the suspensory ligament, and dense, grayish, and fibrous at the bottom.

On making a section, thickened striæ or septa are found to emanate from the fibrous bands upon the surface, and permeate the substance of the organ, inclosing interspaces in which the hepatic tissue is of a deeper and more yellow color than normal. Under the microscope the hepatic cells are enlarged and fatty, or they have undergone amyloid degeneration, while in the neighborhood of the septa they are commonly atrophied.

The size of the liver may be moderately increased during the early vascular stage, but it is commonly diminished at a later period, and in one case reported by Frerichs, it did not exceed that of a man's fist.

The symptoms of this affection are those of ordinary cirrhosis, consisting of loss of appetite, emaciation, ascites, etc.

Gummata.—Gummata are commonly found imbedded in fibrous tissue, and are usually small and multiple. They are seldom larger than a walnut, and are frequently arranged in groups. Their outline is irregular and their consistency firm. Cornil[1] describes the structure of a gummy tumor of the liver as follows: It consists of three portions; a central mass, homogeneous or composed of granular matter, imbedded in which are small round cells. These cells are arranged in groups which are separated by delicate filaments of connective tissue. Around this central portion is an intermediate zone composed of fibrous tissue, which, when recent, incloses numerous round cells; when older, the cells are scanty and fusiform. The third or external zone consists of condensed hepatic tissue, which is filled with cells and is penetrated by fibres of connective tissue from the middle zone. In the central portion of the gumma the vessels are very small or are completely obliterated. The vessels of the periphery are large and their walls are thickened. Scattered among the new cells are small, round, highly refractive bodies, not acted upon by carmine, but deeply colored by purpurine, which Malassez[2] considers peculiar to syphilis. In rare cases the gummatous deposit softens and is absorbed; still more rarely it undergoes calcific degeneration; commonly the tumor contracts, and is transformed into fibrous tissue, in which no traces of its original layers can be found.

These gummatous tumors may be distinguished from tubercular nodules by the fact that the latter are much smaller and more numerous. The centre of a tubercle, moreover, is soft, and perhaps puriform; its fibrous periphery is narrower and less dense than that of a gumma. Gummy tumors can hardly be confounded with cancerous or sarcomatous tumors.

The symptoms of gummata of the liver are often obscure, and the diagnosis must be confirmed by coincident lesions. The organ may be increased in volume, and nodules may be detected upon its surface. Pain may be entirely absent, except on pressure, or it may be very acute; it does not radiate towards the shoulder as in other hepatic affections. Respiration may be painful in consequence of adhesions. Unless the tumors are extremely numerous, there is no interference with the functions of the organ. In severe cases there may be icterus and gastro-intestinal disturbances. The stools may be clay-colored or bloody. Blood may also be expectorated, and epistaxis may occur. The spleen and the abdominal ganglia are often decidedly hypertrophied. The urine may contain albumen. There is sometimes a tendency to anasarca, in consequence of some

[1] Leçons sur la syphilis, Paris, 1879.
[2] Jullien, Mal. vénériennes, Paris, 1879.

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