under the oil-silk hastened the absorption. No known medicine is of any proved service, iodine and iodide of potassium included. Tonics and cod-liver oil do good by improving the quality of the blood.

Nothing has been said of internal medication in the treatment of epididymitis. No medicine has any specific power over it. Gonorrhœal treatment may be continued, as it does no harm. Injections into the urethra are best intermitted.

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## CHAPTER XXV.

### *DISEASES OF THE TESTICLE.*

Pseudo-tubercular Epididymitis.—Tubercular Testis.—Symptoms.—Pathology.—Treatment.—Syphilitic Epididymitis.—Syphilitic Orchitis; Interstitial; Gummy.—Cancer.—Sarcoma.—Diagnostic Table of Syphilitic Testis, Tubercular Testis, Cancer, Sarcoma, including Diagnostic Features of Different Fungi.—Castration.—Dermoid Cyst.—Irritable Testis.—Neuralgia Testis.

Pseudo-Tubercular Epididymitis is very rare. It is simple, slow, chronic inflammation. Désormaux and Fournier[1] seem alone to have called especial attention to it. It is peculiar in being observed, as a rule, only in the course of chronic urethral discharges, and because it simulates tubercularization with the most absolute accuracy, so as to be usually mistaken for it.

It comes on during chronic urethral discharge, often without appreciable, immediate exciting cause, either as a subacute epididymitis, very indolent and not yielding to ordinary treatment, or, even more insidiously, it commences in an absolutely indolent chronic form, simply characterized by knobbed, irregular points of induration in the epididymis, slightly sensitive to pressure. The swelling increases slowly, but the pain ceases, until after a time we may have a large, knobbed, irregular epididymis, a healthy testicle, more or less fluid in the tunica vaginalis, and, perhaps, the vas deferens, which not infrequently participates in the disease, swollen to the size of a pipe-stem, hard, slightly sensitive to pressure, smooth, or knotty and irregular.

There is now a strong tendency to suppuration, and one or more abscesses may form in the epididymis, or possibly in the vas deferens, and discharge externally. Such abscesses long remain fistulous, and closing leave a nodosity which is slow to disappear. Sometimes matter forms near the tail of the epididymis, but the abscess finally dries up without discharging. This may leave a hard, insensitive shot or marble-like lump, freely movable in the scrotum, and connected with the tail of the epididymis by a pedicle. Such curiosities are occasionally encountered. Sometimes resolution is effected after many weeks, perhaps months, without suppuration.

[1] Art. "Dict. de Méd. et de Chir. pratiques."



Case XXXV.—A young gentleman while undergoing treatment for stricture had an attack of epididymitis, which ran its course and got well. Some months afterward, in the early spring, after a winter's hard work at an exciting business, he commenced to run down perceptibly. His gleet, which had ceased, returned, although he continued to use a full-sized sound, and he suffered from an attack of pseudo-tubercular epididymitis. The use of poultices, ointments, and all ordinary means, combined with tonics, failed to effect any improvement. Abscess formed, the vas deferens became as thick as a pipe-stem, the patient was pallid, and more than ever run down. He was now induced to give up business and go to the country, as the only means of safety. He was fortunately very fond of milk. On reaching the country he was directed to give up cod-liver oil and tonics, to stop all medication, general or local, and to live on milk, bread, meat, and fruit. A little abscess which had formed discharged, but general improvement set in at once. The patient gained in flesh and spirits. He continued to use the sound, and his urethral discharge ceased. His abscess closed, and after two months the epididymis and vas deferens had returned nearly to their original size. The following winter they became absolutely normal to the feel.

During this winter, however, again the patient overworked himself, and appeared again in the spring with a precisely analogous condition of disease in the epididymis and vas deferens of the other testicle, but not so far advanced as the previous year. His gleet and general running down had also returned. He still used his sound regularly. The country was again resorted to as a means of treatment, the patient continuing to come to town to his business, wearing a suspensory bandage. No abscess formed, but complete recovery ensued after some months. He is now—three years after his last attack—perfectly well. No induration remains.

Case XXXVI.—Another patient with this form of disease, occurring under precisely similar circumstances, could not be induced to leave town. No treatment seemed to benefit him materially, till after some months he was lost sight of.

The above cases indicate the outline of treatment. It is doubtful if any local measures are of advantage except the wearing of a suspensory bandage.

*The treatment* is hygienic and tonic, in fact exactly the same as for tubercular epididymitis, but with more hopes of entire success.

### TUBERCULAR TESTIS.

Tubercular disease of the testis is usually described as occurring in two forms—one as a continuation and degeneration of chronic inflammatory thickening, left behind by previous disease; the other spontaneous, tubercularization coming on without apparent local cause, and unconnected with any urethral disease. The first of these forms has been described above as pseudo-tubercle. It always affects the epididymis primarily, may extend thence to the vas deferens and seminal vesicles, and finally involve the testis proper as well. It is distinguished under a different head from tubercle proper. Its prognosis is much better. If not arrested, however, its advanced stages may be identical with those of true tubercular testis, and its terminations the same. The pathology of the affection is cheesy degeneration of inflammatory products effused inside of, as well as outside of, the seminal passages.

Tubercular testis proper has certain peculiarities of its own. Its pathology is cell-proliferation, totally outside of the tubes and ducts

(Rindfleisch).[1] Tubercle of the testis does not seem to occur in the miliary form.[2] It comes on without appreciable provoking cause in lymphatic, strumous, or tubercular subjects, sometimes in young men apparently perfectly healthy. It is most liable to appear during early manhood just after puberty, when the physiological activity of the gland is most marked. It may appear in childhood.

*Symptoms.*—The deposit takes place by preference in the epididymis, but the secreting structure usually also suffers later (Rindfleisch). There is no pain, so that it is usual for the disease to pass unnoticed until by accident the patient's attention is attracted by the fact that one testicle is larger than the other. Sometimes, where the deposit is rapid, slight pain is experienced. On examining such a testicle, it is usually found large, hard, and lumpy behind; but the whole organ is often also hard, irregular, unevenly nodular. There is perhaps some fluid in the tunica vaginalis, obscuring the outline of the testis. The vas deferens is often knotty, enlarged, and hard as far as it can be felt, and a finger in the rectum may detect the seminal vesicle similarly affected. There may also be (more rarely) tubercular prostatitis or evidences of tubercular kidney. The testicle feels heavy, the skin over it is unaltered, pressure does not cause pain (unless abscess be forming), nor does it occasion the sensation felt when the healthy testis is squeezed. It is not uncommon for both testicles to be affected, the one in a more advanced stage than the other. If both are involved, the sexual appetite is usually reduced or absent. The malady advances slowly, sometimes remaining stationary for many months; finally the nodules soften into abscess; the skin becomes œdematous, adheres over the epididymis, the patient has a little pain for a few days, when the abscess bursts and discharges a thick, cheesy material, containing, if the body of the testicle has ulcerated, portions of necrosed seminal tubules from time to time.

These abscesses remain fistulous for a long time, sometimes indefinitely, the fistulous tract being marked by great induration from chronic inflammation. New abscesses tend to form, pointing by old or new routes. After abscess of the substance of the testis, hernia testis may come on, and, when the disease mounts the cord, the inguinal glands are not infrequently enlarged. These cases are often mistaken for cancer, and as such extirpated and recorded as fortunate cases of removal of cancer, with no return of the disease. A patient may have both testicles indurated, knobbed, full of fistulæ for years, and still seem to be enjoying excellent health, with the exception of more or less loss of sexual desire and power, but usually he is pale, thin, anæmic, weak, perhaps with tubercular deposits in his lungs or elsewhere.

For differential diagnosis, *see* table after SARCOMA. As to prognosis, a tubercular testicle is not necessarily lost. Pseudo-tubercular disease also is often indistinguishable from it.

[1] "Histological Pathology," second edition. [2] Virchow, however, admits it.



*Pathology.*—Tubercular nodules are developed in the connective tissue (or lymph canals) around the seminal tubes and ducts. These partly organize into fibrous tubercles. The tubercles coalesce into large masses, dirty yellow on section, in direct connection with healthy tissue, not encysted; and then, their vitality being low, cheesy degeneration of the centre takes place. After a variable period the mass breaks down, and is partly eliminated by abscess.

Rindfleisch,[1] following Langhans and Klebs, believes tubercle to be the result of endothelial proliferation in the lymphatic spaces surrounding the seminal tubules.

*Treatment.*—In tubercular disease of the testis the treatment applied may save not the patient's life, for that is rarely implicated, but his sexual power, his peace of mind, and may give life to his children. It is hard to convince such patients that medicine is not the best thing for them, and they suffer so little pain that they are slow to see the necessity of giving up their business and living an easy out-door life in the country. Some patients, unfortunately, cannot follow this course, and their case is sad indeed. Others can, but will not recognize the necessity of it.

The chances are not encouraging or the hope very great, but in all cases where there is a hope that the disease may be pseudo-tubercular, where only the epididymis is involved, the testicle being healthy, where only one organ is affected or even where both suffer, but the disease has not advanced far, the surgeon's duty is plainly to throw the whole weight of his influence into the scale, to induce the patient to flee into the country, to change his air and his surroundings, preferably to go to the sea-side, or to some southern climate, and to observe all the conditions of physical hygiene suitable to tubercular cases. A suspensory bandage is useful, with the testicle enveloped in oil-silk.

These means exhaust our best resources. Local dressings to the testicle are of no avail, except to amuse and satisfy the patient. If abscess form, it should be poulticed, and induced to point quickly, the other treatment being followed unremittingly. Cod-liver oil, the hypophosphites, phosphate of lime, iron—especially the iodide—quinine, cinchona, and to the end of the chapter, are of service as general tonics. Arsenic has value, and possibly iodide of potassium a little. The latter has been greatly overrated. Mercury is of no service. Both mercury and iodine have undoubtedly derived their reputation from curing cases where a syphilitic testicle has been believed to be tubercular, a mistake sometimes not easy to avoid in obscure cases. The rule of treatment in tubercular testis is imperative. Do not lose time by trying drugs. Let the patient get a change of air at any sacrifice to himself, and let him take his medicine while he is using the stronger agents, intelligent hygiene and dietetics.

[1] *Op. cit.*

Case XXXVII.—A gentleman, with commencing double tubercular testis, complicated by hydrocele requiring the use of the trocar, got entirely well during an expatriation of eighteen months, from New York to Syria. The patient afterward married and had a family. As a rare symptom, the patient lost blood from the urethra coincidently with the occurrence of the tubercular deposit, and the effusion into the tunica vaginalis, thus establishing a singular analogy with pulmonary phthisis, and its hæmoptysis and pleurisy.

## SYPHILITIC TESTIS.[1]

Syphilitic disease of the testicle has become of late years a well-recognized affection, and has, indeed, absorbed into itself, according to agreement by most modern authors, most of the cases which were formerly described as chronic inflammation of the secreting portion of the testicle. It is not, indeed, too much to say that perhaps all cases of chronic enlargement of the testicle of a seemingly inflammatory origin, excepting such as are left behind by previous acute inflammation, when not due to cancer or tubercle, are syphilitic, although there may be at the time no other evidence of syphilis upon the patient, and may not have been for years. For distinguishing marks of these forms of enlargement, *see* diagnostic table. There are two forms of syphilitic testis:

1. Syphilitic epididymitis.
2. Syphilitic orchitis, diffuse and gummy.

1. Syphilitic Epididymitis.—An exhaustive description of this affection was first furnished to the profession by Dron,[2] who gives a number of cases. Other authors have since described the disease. No autopsy has yet revealed its exact pathology, but an identity of lesion with other syphilitic affections of the testicle is probable. It is of rare occurrence. It comes on usually in the early months, at a mean of about three or four months after chancre, during the period of the early eruptions. Bassereau and Rollet have seen it coincide with roseola. The disease is confined to the epididymis, mainly to the globus major. The epididymis may suffer with the testicle in the later forms of syphilitic orchitis, but in this earlier form the testicle is only involved in a small proportion of cases. Lancereaux states, as a general rule, that the earlier syphilis attacks the testicle the more liable is the epididymis to suffer. This syphilitic epididymitis has been observed (very rarely) as late as several years after chancre. The disease usually involves both sides at the same time. In one such case, Dron examined the semen of a patient and found spermatozoa. This test might be of service in doubtful cases to differentiate the disease from ordinary chronic epididymitis, although in the latter it is the tail and not the head of the epididymis which is generally involved, and there has been almost invariably some urethral discharge preceding the attack. Furthermore, this syphilitic induration

[1] The testicle, in inherited disease, also may suffer. A well-marked case has fallen under the author's observation, cured by iodide of potassium.

[2] "De l'Epididymite syphilitique," Archives Gén., Sixth Series, vol. ii., November and December, 1863.



of the globus major stands out clearly defined as a hard tumor, entirely distinct from the testicle, and not capped over it as is usually the case in chronic epididymitis. The swelling is indolent, accompanied by an insignificant amount of pain. All reported cases have ended in resolution, it never suppurates, but declines rapidly under the appropriate treatment of early syphilitic lesions (mercurial). Rollet puts the limits of treatment necessary at from fifteen days to two months. Local means are not necessary. No functional alteration or organic lesion is left behind.

2. Syphilitic Orchitis.—This affection appears under two forms:

*a.* Diffuse, chronic, parenchymatous inflammation of the organ, of a peculiar sort.

*b.* Gummy nodules; the latter being an intensification of the former process, often accompanied by it, but of the two forms the more rare.

*a. The diffuse form*, like parenchymatous hepatitis, or nephritis, is an interstitial orchitis, a peculiar sort of chronic inflammation attacking the fibrous envelope and the parenchyma of the organ. Ricord named it albuginitis. The process begins by hyperæmia; young cells appear in the connective tissue of the organ, many of them developing into fibres which go on to contract. These young cells press upon, and gradually cause atrophy of, the tubular structure. The tunica albuginea becomes thickened, as does also the tunica vaginalis. More or less fluid occupies the cavity of the latter, while many adhesions commonly take place between the free surfaces. In this way the organ reaches double its natural size, perhaps more, but rarely becomes very large, unless from a considerable collection of fluid in the tunica vaginalis. Often only a portion of the gland is involved in these changes. Both testicles may be affected simultaneously, but usually consecutively. After a time the newly-formed connective tissue contracts, the septa between the lobes of seminal tubules become greatly thickened, composed of dense, fibrous tissue, showing white on section, while the clusters of tubules intervening between them, after first undergoing a brown pigmentation, become atrophied by pressure, and finally may disappear, lost in the general fibrous metamorphosis of the gland. The contraction may continue, much of the newly-formed material being absorbed, and the process going on to wasting of the organ, until only a stump is left behind. If the gland has only been partially invaded, a depression may be left marking the site of the disease. In this form there is no tendency to suppuration, ulceration, or formation of fungus. This is the slower variety of disease.

*b. The gummy form*, which is believed to be an intensification of the foregoing process, sometimes coexists with it. It is marked by the formation of nodules, usually multiple, which seem often to take their origin in the external tunic of a vessel, or the wall of a spermatic tubule (Lancereaux). They may be found of all sizes, from a mere point to that of an egg, and consist of an agglomeration of cells, with more or

less fatty, granular matter, toughly united by fibrous elements into a lump, presenting, on section, a grayish-yellow or distinct dark-yellow color. As they get larger these nodules tend to soften at the centre. They are surrounded by a grayish areola, traversed by vessels, and later are often enveloped by a condensation of tissue somewhat resembling a capsule. These tumors may form near the surface, or deep in the gland. They may occur in the epididymis. The latter, however, usually escapes, while the vas deferens is very rarely involved. The tunica vaginalis is usually more or less distended with fluid. In gummy orchitis the testicle may acquire a very large size. The gummy tumors once formed may cease to grow, soften, degenerate, and calcify, or be entirely absorbed, leading to atrophy, perhaps, of the whole organ, or only of a portion. Again, the integument over them may ulcerate, after adhesion has taken place, and syphilitic fungus result.

The mechanism of the formation of fungus is as follows: The gummy matter infiltrates the tunica albuginea, and undergoes degeneration, causing softening of that structure, with bulging of the contents of the testicle. The superjacent skin and intervening tissues now inflame and adhere, finally ulcerating and allowing the continuous growth of gummy matter within the testis to extrude through the opening, together with the tubular structure, which may be found lying in little clusters amid the yellow material. The fungus continues to grow, the dartos and skin contract about its pedicle, and the extruded mass becomes covered with some granulation tissue, and bathed in pus. These syphilitic fungi are rather firm to the feel, painless, and do not bleed very easily. If cut off they continue to grow, or, if the disease be not arrested, the sprouting may continue until the whole tubular structure of the testis has been pushed out from the inside, after which it may wither and dry up, the testicle going into complete atrophy. The seminal tubes in the fungus retain some of their activity, as shown by the fact that spermatozoa may be found in the discharge. The fungus differs from other fungi of the testis. After injury some of the tubules may protrude as a slough, but whatever fungus there is is simple granulation, soft, bright, pink, bleeding easily. (For differential diagnosis of fungi of testicle, *see* DIAGNOSTIC TABLE.)

*Symptoms.*—True syphilitic orchitis, affecting the body of the testis, rarely appears until after at least a year, rarely before the third year has elapsed from the date of chancre. It may be very rarely more precocious. Ricord and Bumstead have seen it as early as the fourth or fifth month. It may coincide with iritis, with groups of tubercles, with ulcers, or deeper lesions of bone or cartilage. Not infrequently, however, it comes on long after the patient has ceased to show any evidence of specific disease. The enlargement of the testis takes place gradually and without pain. It is usually first discovered by accident, already quite large, so that the patient affirms that the swelling came on very rapidly, in a day or more. There may be, however, some slight pain at first, especially along the cord, and in the groin, with an uneasy feeling in the testicle itself. When first seen, the size of the testicle is usually not more than twice or three times as large as natural. It may be perfectly smooth, and hard as wood, the epididymis not distinguishable. Usually the body of the testis is irregular and nodular, very hard, or there may be one or more prominent lumps of gummy exudation. Only a portion of the testicle may be involved, the rest feeling natural. In such a case the healthy portion may be normally sensitive, giving, when pressed, the natural sensation of squeezing the testicle. Often, however, the swelling is wholly insensitive, and may be squeezed at will, without evoking the least uneasy feeling.



The outlines of the testicles may be obscured by a considerable collection of fluid in the tunica vaginalis. After drawing this off, the hard, nodular, uneven outline of the insensitive, syphilitic testis becomes apparent. The vas deferens is always healthy, and the scrotal tissues rarely involved, so that the hard mass can be freely moved and examined under the thin skin of the scrotum. The general health may appear excellent, but, if both testicles are involved, sexual appetite and power are almost invariably absent. There are no erections, and function is temporarily abolished. The same impairment of sexual function exists in a less degree where one gland only is involved. There may be, very rarely, a syphilitic fungus, as described above. The glands in the groin are not affected. (For differential notice, *see* DIAGNOSTIC TABLE.)

The duration of the disease may extend over several years. The terminations are resolution, degeneration (fibrous, fatty, calcific), atrophy.

*Prognosis.*—The prognosis is good. The seminal tubules do not become occluded. They only perish by degeneration and atrophy, from pressure, and some of the canaliculi have usually escaped. The sooner treatment is commenced, the better the prognosis. The gummy material melts away under appropriate measures, liberating from pressure such of the tubules as have escaped atrophy, and, with a return of the organ to its natural size, erections and sexual appetite reappear. Gosselin has found spermatozoa in the semen of patients who had had double syphilitic orchitis after the same had been cured by treatment. Relapse is always to be feared, especially if the treatment be not persisted in long enough, or if the testicle be subjected to mechanical violence when nearly cured.

*Treatment.*—All three forms of syphilitic testis are amenable to treatment. Early syphilitic epididymitis gets well promptly under mercury, employed as for the earlier syphilides. Of the other two forms, the purely gummy may be more promptly relieved; but, in any case, the earlier an intelligent treatment is instituted the more speedily does the disease respond. The mixed treatment is most commonly ap-

plicable—mercury and iodide of potassium; but, as a general rule, the later the attack after the chancre the more reliance is to be placed upon the iodide, and the less upon mercury. With distinct, large knobbed, gummy tumors, and always with syphilitic fungus, and in connection with other marked evidences of tertiary disease, the iodide should be used alone, carried rapidly to a high dose. (*See* TREATMENT OF SYPHILIS.) A suspensory bandage should be worn, and all hygienic means employed. Local treatment is unnecessary.

*Fungus* may be touched with nitrate of siver, and strapped after any constriction at its neck by the scrotal tissues has been divided; but reliance can only be placed on internal treatment, which will cause it to shrink back into its place. It is unwise to cut away any portion of it, for healthy seminal tubules may thus be sacrificed. It is needless to add that no attempt should be made to cure the accompanying hydrocele by local means. The fluid will disappear as the tesicle reduces in size (Case XXVIII.), and no injections or other local measures can cause its subsidence before that time. As often as the tunica vaginalis becomes distended a palliative puncture may be resorted to. If occasionally the hydrocele persist after the testicle has returned to a state of health, it may then be treated successfully by the ordinary methods. Sometimes a syphilitic testicle is first suspected, after the evacuation of a hydrocele, by the characteristic feel of the gland. Extirpation is not to be thought of. Before syphilitic disease of the testicle was understood, the older surgeons were in the habit of extirpating many large, chronic, indolent swellings of the organ (called sarcocele, or hydro-sarcocele), which an appropriate treatment might have restored. Sir Astley Cooper at one time gave it as a general rule that no testicle should be removed for chronic enlargement and induration until "the gums had been touched by mercury." Modern progress has altered the rule. We no longer "touch the gums," but it may now be safely laid down as a proper rule to follow, *in all cases of doubt, with enlargement of the testicle, never to operate until a thorough anti-syphilitic treatment has been tried faithfully, including large doses of the iodide of potassium.* A final caution must be given, namely, not to remit treatment too soon. It should be kept up for many months after the testicle has resumed its natural size, and only given up gradually, for fear of relapse.

### CANCER OF THE TESTICLE.

Soft carcinoma is the only variety of cancer occurring primarily in the testis. Scirrhus lacks the "strict requirements of anatomical proof."[1] Pigmented cancers are said to have been seen as metastases. But even soft cancer is very rare. It does occur, however, and is found at all ages, from the cradle to the grave. Pitha saw it in a new-born infant.

[1] Rindfleisch, *loc. cit.*, p. 351. Curling, Pitha, Foerster, Verneuil, and others, admit scirrhus. Nepveu reports a case, "Tumeurs du Testicule," Paris, 1872, p. 35.



After sixty it is very uncommon. It is met with mainly in early manhood, when the function of the testicle is most active. It rarely occurs on both sides. An injury seems sometimes to be the immediate exciting cause. Sarcomatous tumors of the testis are very liable to degenerate after a time, and become carcinomatous.

*Symptoms.*—Gradually, sometimes rapidly, induration and enlargement come on. The oval shape is preserved, there is only slight pain (worse on pressure throughout the disease), and there is effusion into the tunica vaginalis. As the testis grows, it becomes uneven on its surface, elastic in portions, perhaps so soft as to give the idea of true fluctuation. The pain now increases in the testicle and cord, the latter becomes engorged, the pelvic and abdominal glands, as also often the inguinal, swell and become cancerous. The tumor formed by these glands may usually be felt in the loins. There is generally constant pain in this region. Venous circulation is impeded by pressure of the cancerous masses upon the great abdominal veins, the veins of the scrotum stand out varicose and prominent, the leg becomes œdematous. The pains become intense, sharp, shooting, often burning in paroxysms, between which a constant ache is felt in the testicle and cord. The testicle during this period has been constantly growing, it has burst the bounds of the tunica albuginea involved the epididymis and cord, but the scrotum expands and the tumor may reach the size of a child's head. Boyer removed a cancerous testis weighing nine pounds.[1] During its growth it may experience periods of rest when there seems to be little or no advance made, or when it may become smaller for a time, by the absorption of some fluid portions, as of fluid in the tunica vaginalis. The pain is aggravated by pressure, and the normal feeling on pressure is absent. After a time, if death or an operation do not remove the tumor, the scrotum will adhere to it at some one or more prominent portions, the skin will ulcerate and the cancerous mass will spread to the outside, forming fungus hematodes, the true cancerous fungus. This is bathed in a thin bloody ichor, grows rapidly, portions of it slough away, and it often bleeds profusely. Meantime the general health, perfect at first, suffers proportionally with the advance of the disease, until finally well-marked cancerous cachexia is reached, attended by its usual sallowness, and tendency to waste away.

The pain so characteristic of this disease is sometimes very slight in the testicle, but particularly so in connection with the cancerous growths from the pelvic and lumbar glands, where there may be no pain at all with advanced disease (Brodie).

*Pathology.*—The disease commences at different points, which coalesce. It is rarely a general infiltration. On section it is impossible with the naked eye to distinguish between soft carcinoma and soft sarcoma, but the soft "medullary" sarcoma is also malignant, affects

[1] *Revue Médicale*, November, 1839.