coils of intestine filled with fecal masses, or perhaps also enlarged glands. The loops of intestines were adherent to each other by a recent plastic process and by poking about with my finger and separating them I opened an abscess and about two ounces or more of foul smelling ("rotten egg") pus welled up out of the wound; so far as we could, we prevented the pus from running in among the coils of intestine and after emptying the abscess as well as possible, a double rubber drainage tube was passed into the cavity and the incision closed around the projecting ends of the india-rubber tube. The boy did not sit up out of bed till February 3d, about three weeks after the operation. His temperature varied from 99 to 102.9° and he required opiates for four days. His bowels moved on January 15th. The wound discharged freely for a fortnight and united by granulation. He is now well, hearty and strong and is gaining flesh. There is not the least tendency to hernia, but I have had an elastic abdominal supporter fitted, as I always do after a recovery from laparotomy from whatever purpose done.

[Dr. Homans now showed the boy undressed.] As you see, the boy is fat and strong, and here is the cicatrix of the operation.

The credit of the cure belongs more to Dr. Greene than to me, as I was only his instrument in the case.

LOCALIZED AMYLOID DEGENERATION; AMYLOID LYMPHOMA. (?)

BY REGINALD H. FITZ, M.D.,
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In the report¹ of a late meeting of the Boston Society for Medical Improvement it is stated that an amyloid submaxillary tumor was shown to the Society.

Owing to the extreme rarity of the affection it seems desirable that a more detailed description should be given of the characteristics of the case. Mr. G. H. Francis of the Massachusetts General Hospital, has sent all the data there recorded. These were collected before the importance of the growth was fully appreciated. An attempt to obtain further information from the patient, after discharge, was unsuccessful.

She was an adult who had always been well. Three years ago she noticed a small, hard lump just below the jaw, and about an inch in front of the angle. The growth was very slow, and until within four months was of the size of a walnut. When she entered the Hospital the external tumor was about three-quarters of the size of a hen's egg. An operation for its removal was successfully performed by Dr. A. T. Cabot. He found the growth deeply seated but not closely adherent to the surrounding tissues.

The specimen was an elongated, globular, coarsely lobulated mass, about the size of a pigeon's egg, and of a density suggesting that of cartilage. The surface was smooth from the presence of a thin, fibrous capsule. The cut surface was smooth, homogeneous and translucent. Its color was a pale, reddish-gray sprinkled with occasional irregular, small, opaque, yellow spots, and became of a darker red on prolonged exposure to the air. The cut surface was streaked here and there with opaque gray lines. When a solution of iodine was applied, dark, reddish-brown patches appeared.

Sections of the fresh specimen were examined with the microscope. Numerous rounded and elongated

patches and streaks of a homogeneous glistening appearance were seen. These become of a carmine tint when stained with methyl-violet, and of a blue color when treated with iodine and sulphuric acid.

After the tumor had been preserved for some days in alcohol, sections were prepared for microscopic examination. Although the greater part had undergone the amyloid degeneration certain portions still showed structural details. Numerous round cells corresponding in size with white blood-corpuscles, and for the most part with a single, relatively large, nucleus, were grouped together more or less abundantly, but without closely simulating known typical structures. The cells were occasionally accumulated in rounded and elongated cavities with a thin smooth wall, suggesting lymph vessels. There was but little intercellular substance and this was homogeneous or fibrillated, not definitely reticulated. Arteries and veins were readily recognized. There were no epithelial structures to be seen.

When iodine was added to the sections from the alcoholic specimen these became dark-brown in patches but elsewhere assumed a brick-red color. This difference in reaction corresponded with a variation in the distribution of the hyaline material. The dark-brown patches were the rounded masses, with indented border, at first suggesting concretions sharply defined by the surrounding fibrous tissue. When stained with lithium-carmin these apparent concretions were found to be traversed by rare delicate capillaries and more frequent lines of elongated cells with occasional fibres. The brick-red portions were composed of the hyaline material in the form of an irregular net-work of coarse lines between which were unaltered fibres and cells.

The micro-chemical examination of the tumor thus confirmed the diagnosis of amyloid degeneration indicated by the macroscopic reaction with iodine. The nature and origin of the tumor was less apparent. Its shape, size and seat suggested a lymphoma. The absence of epithelial structures and the presence of abundant cells resembling leucocytes favored this view. The arrangement of cells though not characteristically lymphadenoid, more nearly resembled that of a lymphatic gland than of any other normal structure. The presence of degenerated lymph-follicles was directly suggested by the amyloid clumps already described.

The occurrence of localized amyloid disease is well recognized in all the recent works on pathological anatomy. It is stated to have been found in old blood-clots, in endocardial thrombi, and in a nodule of old hæmorrhagic infarction. It has been observed in syphilitic scars, chronic ulcers, tumors of the larynx and conjunctiva (trachoma) and in cancer of the stomach. Its presence in keratitis and in degenerated cartilage has also been noticed. Virchow² found evidence of amyloid disease of lymphatic glands near diseased bone. Amyloid axillary glands were observed by Billroth³ near a carious shoulder-joint in a tuberculous patient in whom there was no amyloid disease elsewhere. Birch-Hirschfeld⁴ states that he found amyloid lymphatic glands in the mesentery of a person who had recovered from typhoid fever. The only recorded case analogous to the one here reported is that observed by Billroth.⁵ The patient, a female, was twenty-eight years old, and for eleven years had a tumor of the

¹ Virchow's Archiv. 1885. viii, 366.

² Beiträge zur Path. Histologie, 1868. 177.

³ Lehrbuch der Path. Anatomie, 2 auf. 1882, I, 46.

⁴ Loc. cit. 186.

⁵ Journal, 1886. CXIV, 158.

right side of the neck. It had gradually become as large as a goose-egg, and then remained stationary for several years. The gross characteristics, the microscopical appearances and the chemical reactions correspond closely with these features as observed in Dr. Cabot's case.

There can be no reasonable doubt that the cases are identical in character. The presumption of the lymphomatous nature of the submaxillary tumor becomes strengthened by its resemblance to the cervical growth. In the latter, Billroth found in a few places a distinctive lymphadenoid structure.

THE OPERATION OF SHORTENING THE ROUND LIGAMENTS, WITH TWO CASES.¹

BY F. B. HARRINGTON, M.D.

CAROLUS STEPHANUS, an anatomist of the sixteenth century, is said to have discovered the round ligaments of the uterus.

Gray² says: "The round ligaments are two rounded cords, between four and five inches in length, situated between the layers of the broad ligament in front of and below the Fallopian tube. Commencing on each side at the superior angle of the uterus, this ligament passes forward and outward through the internal abdominal ring, along the inguinal canal to the labia majora in which it becomes lost. The round ligament consists of areolar tissues, vessels and nerves, besides a dense bundle of fibrous tissue and muscular fibres prolonged from the uterus, inclosed in a duplicature of the peritoneum, which, in the fœtus, is prolonged in the form of a tubular process for a short distance into the inguinal canal."

Rainey³ believes that the principal function of these ligaments is to draw the uterus towards the symphysis pubis during sexual intercourse, and thus favor the ascent of the semen. He says, "The so-called round ligaments of the uterus, regarded as a muscle, may be said to arise by three fasciculi of tendinous fibres, the inner from the tendon of the internal oblique and the transversalis is near to the symphysis pubis; the middle (fasciculus) from the superior column of the external ring near to its upper part, and the external fasciculus from the inferior column of the ring, just above Gimbernat's ligament. From these attachments the fibres pass backwards and outwards, soon becoming fleshy. They then unite in a rounded cord, which passes through in front of the spermatic artery. It then gets between the two layers of the perinæum, forming the broad ligament, along which it passes backwards, downwards, and inwards to the anterior and superior part of the uterus, into which its fibres, after spreading out a little, may be said to be inserted.

Dr. James A. Adams⁴ says, "Besides muscular tissue there is an abundance of fibro-areolar tissue intermixed." Adams believes that the round ligaments are active during parturition, fixing and maintaining the uterus in due relation to the pelvis.

During pregnancy, as is well-known, the round ligaments are much enlarged, and there is an increase of muscular development.

Alquié, a French surgeon, in 1840, proposed and discussed with details the operation of shortening the round ligaments. The proposition was condemned, and attracted little or no favorable attention. There were no operations on living subjects. Aran, Deneffe, Soupert, Burggroeve, Revington, Freund, Schultze, and Adams subsequently proposed the same operation.⁵

Dr. William Alexander, on December 14, 1881, successfully operated on a case of prolapsus uteri by pulling out and shortening the round ligaments. Since that time he has operated upon a large number of cases with good results. Dr. Alexander, although not the originator of the operation, is the surgeon to whom the credit of its first repeated and successful performance is due.

The result of drawing out the round ligaments through the external abdominal rings is to lift the uterus and broad ligament upward and forward. With a movable uterus this can, almost without exception, be accomplished. Backward displacements and prolapse of the uterus can thus be corrected. What now is needed is the testimony of operators regarding the difficulties, the dangers and the final results of the operation. After considering the statistics, and from a limited personal experience, I should say that the operation was one of great merit in appropriate cases.

I have been able to find reports of one hundred and forty cases by twenty-one operators. Sixteen of these twenty-one operators, who operated upon one hundred and twenty-six of the cases, look upon the operation with favor. Four operators, who have had nine cases, are in doubt as to the value of the operation, or express no opinion. Two operators, who have had five cases, look upon the operation with disfavor because of the difficulties, the dangers, or the poor results.

Three deaths, as the result of the operation, have been reported. One of these occurred in the practice of Dr. Alexander. The patient died with signs of pyæmia, due, he thinks, to a lack of care and cleanliness. Dr. Coe⁶ reported an autopsy in which death followed an operation on the round ligaments. There had been sloughing of the round ligaments and pyæmia. There was no peritonitis. A third death occurred in the hands of a Liverpool surgeon, and is referred to by Dr. Alexander as the result of pyæmia.

Dolérís (*loc. cit.*) thinks that Alexander⁷ makes too little of the difficulties and dangers of the operation. Mundé failed to find the ligaments in three out of six cases. Alexander has never failed to find them. In one case, a ligament which he could not find was afterwards discovered at a later operation. Dr. Imlach never failed to find the ligaments in thirty-six cases. Alexander, before the British Gynecological Society,⁸ said: "The operation is a delicate one, and quite different from nearly all the ordinary operations. It resembles most ligature of arteries or neurotomies, but from both it differs in many essential particulars. In the ligature of arteries, the pulsation of the vessel guides us to the spot, and assures us that we have reached the structure we seek. In looking for a nerve, we have a characteristic white structure to find, and twitching often shows us when we have found it. The round ligament does not pulsate, and is of a pale flesh color when first seen. It lies imbedded in other tissues,

¹ Read before the Suffolk District Medical Society, Surgical Section, April 7, 1886.

² Anatomy, Descriptive and Surgical.

³ On the Structure and Use of the Ligamentum Rotundum Uteri. Lond., Phil., Tr. 1880.

⁴ A New Operation for Uterine Displacements. Glasgow Med. Jour., June, 1882.

⁵ Dolérís. Nouvelles Archives d'Obstétrique et de Gynecologie, January, 1886.

⁶ American Journal Obstetrics, November, 1885.

⁷ Shortening the Round Ligaments, London, 1884.

⁸ British Gynecological Journal, November, 1885.