NONSUPPURATIVE SUBPHRENIC PERITONITIS

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In 1912, I described by this term a not uncommon complication of appendicitis,¹ and stated that "nonsuppurative subphrenic peritonitis complicating other conditions such as abscess of the breast, cholelithiasis, traumata, etc., has been observed and may be the subject of a future communication." The varying etiology had no striking effect on the clinical picture, and no new observations were made. Therefore the subject was not further dwelt on. The object of the present paper is, in part, a brief review of the subject in order to show that "the group of cases of subdiaphragmatic inflammation not hitherto recognized," recently described by Lee,² presents a clinical picture that coincides with the one already reported by me.

That a nonsuppurating subphrenic inflammation could exist appeared to have been almost entirely overlooked theretofore.³ My paper dwelt with the condition only as a complication of appendicitis, for the latter was the most frequently observed cause. The clinical picture was characteristic, but there were some differences in physical signs and symptoms in the fifteen reported cases. The variations depended on differences in the site, intensity and the extent of the inflammation, the amount of ballooning of the diaphragm, pleural involvement, and lung compression.

To describe a typical case: Fever returns, and the patient complains of some pain in the right lower chest several days after the appendicitis operation and the subsidence of peritonitic manifestations. In the earliest stages, physical examination may reveal very slight changes; often, however, one finds intercostal tenderness near the base of the right axilla or more posteriorly, some dulness and diminished breathing in the tender area, and perihepatic friction sounds. At the height of the infection, intercostal tenderness and rigidity localized to the seventh, eighth and ninth spaces in the axillary zone (or more diffusely spread over the right lower chest) are usually pronounced. The intercostal tissues are resistant, the spaces are occasionally obliterated. The area of dulness rises to a varying elevation, sometimes reaching the level of the scapula; it is generally highest in the axilla, the upper margin of dulness curving downward from the most elevated point. The percussion note is often flat at the base. Fremitus, voice and respiratory sounds are usually diminished over the dull area, and all three may be absent at the base. The breath sounds often have a faintly tubular quality. In the later stages of the infection, pleural or perihepatic sounds are uncommon. The liver may be palpable, but is not tender. Pronounced leukocytosis, with high polynuclear percentages, is present almost invariably. The temperature curve follows a very irregular course, beginning rather abruptly and dropping gradually; chills do not occur. The duration of the symptoms and physical signs is from five to thirty days. In seven of the nine cases in which exploratory aspiration for suspected subphrenic abscess was employed, it was followed by an almost critical drop in temperature and by recession

of the symptoms and physical signs. These evidences of the rapid recovery that ensued were interpreted as the unexpected therapeutic results of exploratory puncture. Severe prostration was infrequent in nonsuppurative subphrenic peritonitis. All the patients recovered and were free from complications and sequelae with one exception. There persisted, in this case, some symptoms and signs ascribed to the roentgenographically demonstrated permanent elevation of the right half of the diaphragm.

At the time my paper was published, the only actual proofs of the existence of the subphrenic inflammation were: 1. An exudate extending from the region of the ascending colon over the superior surface of the liver, seen at a laparotomy in one case. 2. Dense inflammatory tissue between the liver and the ballooned diaphragm, encountered in the exploration of the space, in another case. 3. Resistance to the aspirating needle and the withdrawal of small amounts of clear fluid, in several cases. Since then I have had the opportunity⁴ to observe the postmortem examination made on a patient who died some time after a subphrenic peritonitis. The latter had no bearing on the cause of death. The diseased gallbladder, containing several calculi, was the evident source of the subphrenic infection. Dense fibrous adhesions spread from the gallbladder to the duodenum; in the opposite direction, to the subphrenic space, in a broad area adherent to the superior surface of the liver. The adhesions were less dense in the highest part of the subphrenic space. The diaphragm was also involved here, the opposed hepatic and diaphragmatic surfaces being firmly bound together. There were no changes under the capsule of the liver to suggest that it was the source of the infection, and no findings to indicate that supuration had existed in the subphrenic space.

Turning to the description of the group of four cases reported by Lee, the close parallel in clinical picture and course is at once evident. There was the same considerable variation in the manifestations, but the general conformation to a definite type. The infection was ushered in by fever and, in two cases, by cough and pain in the right chest. The physical signs were dulness over the right axilla or more posteriorly, merging into flatness at the base. The dulness sometimes extended to the level of the scapula, its upper border following the curved line of Ellis. Lee observed two constant characteristics of the area of dulness. By light percussion its upper level was several inches higher than by deep percussion. The zone of dulness (and of flatness) descended with inspiration. In addition, the Grocco sign was invariably present. Fremitus, voice and breathing were diminished over the dull area, and were absent at the base in several instances. Friction sounds were heard in three cases. In one case there was considerable bulging of the lateral chest wall over the liver, and the intercostal spaces were obliterated. Roentgenoscopic examinations always showed an abnormal elevation of the right half of the diaphragm, persisting in two cases after the infection had cleared up. The temperature always ran an irregular course, tending to fall by lysis; its duration was from eight days to four weeks. None of the patients had chills. Blood examinations showed an active leukocytosis (reaching 55,000 in one case) with high polynuclear percentages.

1. Neuhoof, Harold: *Surg., Gynec. and Obst.*, March, 1912.

2. Lee, R. I.: Subdiaphragmatic Inflammation, *THE JOURNAL A. M. A.*, April 17, 1915, p. 1307.

3. Previous suggestive observations are reviewed in my paper.

4. At the Krankenhaus Friedrichshain, Berlin, through the courtesy of Prof. Ludwig Pick.

All the patients recovered spontaneously. Lee states that the etiology of the subphrenic infection was unknown, in his series of cases, although he points to its development after an operation for incarcerated hernia, in one case. In another case there was a possible association between the subphrenic infection and a prolonged diarrhea.

From the foregoing, it can be said that Lee's contribution is of distinct value in the presentation of more clean-cut physical signs of nonsuppurative subphrenic peritonitis and in the demonstration that more obscure foci than a diseased appendix, gallbladder, etc., may be the source of the infection. In all respects, however, the clinical pictures of the groups of cases reported by Lee and, previously, by myself, are identical. The existence of the lesion is finally established by the reported postmortem examination.

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OTITIC PNEUMOCOCCIC BACTEREMIA *

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Cases of simple otitis media with bacteremia are sufficiently rare, or are so seldom recorded in the literature, as to warrant the report of the following case:

B. S., girl, aged 9, was taken ill, March 5, 1915, with fever and malaise. A saline cathartic was administered, and, March 7, the temperature dropped to 99, but rose during the night, accompanied by severe pain in the left ear. I saw the patient for the first time on the following day, that is, on the fourth day of the illness, and found the temperature 102.6, pulse 110, respirations 24. The patient complained of pain in the left ear. The throat was normal, turbinates congested, right ear normal, left tympanum bulging and deeply congested. An immediate myringotomy was done. Despite the fact that there was a copious bloody serous discharge, the temperature rose that night to 105 and remained the following day between 103 and 104. The right ear drum was pale and normal. There was no pain in the left ear. During the night there was pain in the right ear, and the following morning the right ear drum was found to be bulging, deeply congested, and almost black. A liberal incision in the drum was made. Again the temperature rose during the night to 105. The following day, March 11, there were no pain and no mastoid tenderness; both ears drained freely with bloody serous discharge, and the temperature ranged from 102 to 105. Smears from the ears showed the pneumococcus.

March 12, Dr. E. Libman examined the patient; he could find no lung, meningeal or other complication. A blood culture was taken. The temperature at that time was 101.6, but rose during the night to 106. The patient was somewhat delirious. Leukocytes, 14,000. Polymorphonuclears, 61 per cent.

March 13, blood cultures as yet showed no growth. The temperature fluctuated between 102.5 and 105.8. Discharge from the left ear was almost nil, and the membrane was becoming pale. The right ear was discharging freely. Despite the continued high temperature, I felt reasonably sure that there was no mastoiditis. There were no chills at any time, the patient was withstanding the high temperature very well, and I felt justified in waiting another day.

March 14, the ninth day of illness, the temperature in the morning was 98.4. There had been a steady drop during the night from 105.8. My delight was somewhat clouded by a report that the blood culture showed a growth of pneumococcus, but it was slight, only one colony. This was thirty-six hours after blood had been withdrawn. The

temperature rose in the afternoon to 102.6. The left ear was healed. From the right ear there was a slight discharge which later became purulent and continued for two weeks. The patient had no more high temperatures after this.

Recovery was retarded by the occurrence three days later of a duodenitis, which persisted for about two weeks. This was undoubtedly metastatic in character. The patient was examined, April 17, 1915. Both ears had healed, and the patient was well.

It is possible that, if blood cultures were taken, many cases of otitis would show a bacteremia, and would help verify the contention of bacteriologists that there is hardly an infection, no matter how slight and localized, but that, at some time during its course, bacteria are demonstrable in the general circulation.

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FOREIGN BODY IN THE BLADDER

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F. M., German, aged 19 years, machinist helper by trade, with poor general physical condition, and mentally below par, was given to frequent masturbation, and was of that type in which direct irritation of the urethral mucosa was necessary for complete sexual satisfaction. The chief complaint was general weakness and constant dribbling of urine.

Three years before, while he was masturbating with a bougie molded from a piece of chewing gum, it accidentally went beyond his reach, entered the bladder and caused the subsequent cystitis. The patient kept on working as usual, until three weeks before I saw him (Sept. 15, 1914), when incontinence set in and a constant gripping pain began to annoy him at the neck of his bladder. He had not worked since the latter train of symptoms came on, but sat about all day, listless and dull, in clothes reeking with the odor of foul urine. He was placed on urinary antiseptics, was later examined with a stone sound, which revealed a large movable stone resting on the base of the bladder.

Suprapubic cystotomy was done through an extraperitoneal incision. The bladder wall was thickened, and the mucosa deeply congested and coated with fine granular salt. The trigon was completely hidden by a stone the size and shape of a medium-sized lemon. A projection from the bottom of the stone extended into the prostatic urethra.

The patient was placed on general tonic treatment, and the bladder irrigated daily; but his general condition continued to grow worse until he finally succumbed seven weeks after operation.

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Japanese Obstetrics.—Even in ancient Japan the treatment of pregnant women received great attention. There was a special birth-chamber in which the woman remained three weeks before and three weeks after delivery. In the second half of pregnancy a belt was worn and by rubbing the abdomen the production of a correct presentation was attempted. During the birth and for eight days afterward a special birth stool was employed. After the middle of the eighteenth century obstetrics received a great impulse through Kagawa Shigen, at one time a rubber and acupuncturist. He published in 1765 an epoch-making work, *San-ron*, in which he attacked many erroneous Chinese views and collated many sound observations intermingled with *a priori* conclusions. The successors of Kagawa Shigen worthily continued these rational endeavors. The following particulars may be mentioned as having been known and practiced: the knee-elbow parturient attitude; care of perineum; double ligature of umbilical cord and section of same with scissors; powdered gall as a styptic; removal of the retained placenta by rubbing the abdomen and pulling on the cord; eventual instrumental extraction; nursing only after the fourth day.—Neuberger, *History of Medicine*.

* Read at a meeting of the New York Physicians Association, April 22, 1915.