adequate we may also puncture the ventricles. In other words, the operation should be progressive. It is now recognized that any trephining should be done in two stages, as Horsley advises; the first removing the button of bone, the second opening the dura and exploring the brain. By adopting this method in simple palliative trephining we have but to prolong the interval between these two stages a few weeks in order to see whether the second stage of opening the dura is necessary.

If we summarize the results of surgical interference in cases of cerebral tumor in the last fourteen years the outlook must be acknowledged to be discouraging. In about five-sixths of the cases of intolerable headache trephining will afford temporary relief, and, while sometimes hastening the end, will make the remaining period of life more endurable when drugs have failed to do so. In some cases of progressive amblyopia palliative trephining may also prevent blindness by checking the progress of the neuritis.

With regard to the more radical operation of removal of the tumor the chances of success are few and the outlook for the future is more hopeless. We do not seem to have gained much in diagnostic skill, although the gain in operative technique has diminished the mortality. Less than ten per cent. of all cases are amenable to surgical interference, and a mortality of nearly one-third renders the operation one to be undertaken only after grave deliberation. The chances of complete recovery after such an operation are very small, probably less than ten per cent. of the cases where the growth is wholly removed. The rest of the cases linger on, paralytic, epileptic or blind, and many finally succumb to a recurrence of the growth. It is a question whether the results of these operations are any more favorable than would be those obtained by medical treatment in the same number of cases, but statistics on this point are inadequate. Nevertheless, there is a small chance that an operation may effect a complete cure, or, at least, give relief for a number of months. With that chance, small though it be, an operation becomes justifiable, and the sooner it is done, if it is to be done, the greater the chances of permanent benefit. The constant increase in operative skill will probably continue to lessen the death-rate, and, although little has as yet been gained in diagnostic skill, there is still room for hope.

TABLE XII.

SIXTY-EIGHT PALLIATIVE OPERATIONS (INCLUDED IN TABLE V).

		Improved.	Improved. Died later.	Not improved.	Not stated.	Died.
	Previously collected, 7. Knapp. Op. cit.	6	1			
	Albert. Wiener med. Wochenschr., Nos. 1, 3, 5, 1895	2				
2	Albert. " "		1			
	Bartlett and Van Lennep. Hahnemann Monthly, April, 1894	1				
2	Von Beck. Mittheil. aus d. Grenzgebiet. d. Med. u. Chir., i, 247, 1896.	1				
	Beevor and Ballance. British Medical Journal, i, 5, 1895	1				
	Broca and Maubrac. Archives gén. de Méd., February, 1896	1				1
	Brugelius and Berg. Hygiea, lvi, 529, 1894	4				
	Bruns. Neurolog. Centralbl., xii, 386, 1893		1			
	Bruns. Wiener med. Presse, 321, 1893	2		1		
	Carson. Annals of Surgery, xxviii, 328					1
	Caton and Paul. British Medical Journal, ii, 142, 1893	1				
	Chipault. Cong. français de chir., x, 283, 1896	3		1		
	Chipault. Gazette des Hôpitaux, lxxi, 557, 1898		2	1		1
	Chipault. L'Independance Méd., i-ii, 337, 1895–96	1	1			1
	Clarke and Morton. British Medical Journal, April 13, 1895	1				
	Cobb. British Medical Journal, October 6, 1888	1				
3	Courtney. Unpublished		1			
	Dercum. Transactions of American Neurological Association, 1895		1			
	Diller. American Journal of Medical Sciences, November, 1892					1
	Hektoen. Journal of American Medical Association, February 11, 1893					1
	Henschen. Pathologie des Gehirns, iii, 233, 1896		1			
2	Hern. British Medical Journal, ii, 1,045, 1893	1				
	Hœftmann. Verhandl. d. deutsch. Gesellsch. f. Chir., xviii, 87, 1889	1				
	Jaboulay. Arch. prov. de chir., i, 61, 1893					1
3	Kammerer. Annals of Surgery i, 685, 1894			1		
	Keen. American Journal of Medical Sciences, February, 1894		1			
2	Keen. Medical News, September 20, 1890					1
2	Kocher. Corr. Blatt. f. schweiz. Ærzte, No. 17, 1889	1				
	Kocher. British Medical Journal, ii, 1,367, 1893				3	
3	Kramer. Cincinnati Lancet Clinic, xxxix, 523	1				
	Park. Medical News, December 3, 1892	1				
	Patrick. International Clinics, 6th Series, iv, 157, 1897	1				
	Putnam. Boston Medical and Surgical Journal, i, 66, 1896	1				1
	Rohmer. Revue méd. de l'Est., xkx, 251, 1898	1				
	Sahli. British Medical Journal, ii, 1,367, 1893				1	
	Shattuck, Folsom and Bradford. Unpublished		1			
3	Stewart. Medical and Surgical Reporter, October 5, 1895	1				
	Stewart. Edinburgh Medical Journal, 935, 1894		2			
	Thorén. Hygiea, lvii, i, 544, 1895	1				
	Warnots. Cong. français de chir., vii, 1893					1
	Wyeth. Annals of Surgery, 685, 1895		2			

Clinical Department.

A CASE OF HEMORRHAGIC PLEURISY; PERMANENT DRAINAGE; RECOVERY.

BY GEORGE G. SEARS, M.D., BOSTON.

During the past year a singularly large proportion of the cases of acute pleurisy with effusion which have come under the observation of the writer have been of

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the hemorrhagic type, but with two exceptions their clinical history differed in no respect from what is expected when the effusion is simply serous, the patients either recovering after one or two aspirations or failing gradually as the result of other processes with which the disease was associated. These two were exceptional, both in the large proportion of blood contained in the exudate and in their course. One is referred to in the title of this paper, the other is briefly reported from the marked contrast which it furnished in its termination.

Wm. C., thirty-seven years old, a cattleman on a transatlantic steamer, entered my service at the City Hospital on June 30, 1898. His family history was negative. He had always used alcohol to excess but his general health had been good. He had had several attacks of gonorrhea and a year ago had had a "chancre," but no secondary symptoms had been noticed. About the same time he sustained a fracture of the seventh and eighth ribs on the right side anteriorly. A week before entrance he had been kicked by a steer in the left side, but this had caused him very little inconvenience. On June 26th, while considerably under the influence of liquor, he went in swimming, and during his bath was suddenly attacked by severe pain in the right lower chest, which was followed by a short and distressing cough. He became much prostrated and sweat profusely.

Physical examination showed a well-nourished, powerfully-developed man, but anemic and suffering from marked dyspnea. The entire right chest was dull on percussion. Above the third rib the fremitus and voice sounds were increased and the respiration was bronchial; below that point they rapidly diminished and were soon lost. The left chest was negative. The heart's apex was in the sixth space, a good inch outside the nipple line. There were no murmurs. The lower edge of the liver extended about two fingers' breadth below the costal margin. Over the lower portion of the left chest the skin was somewhat discolored from a recent bruise, but no evidence of injury, either past or present, was discovered on the right side. On entrance, the temperature was 99.2°, pulse 130, respirations 40. During the six weeks in which he remained in the medical ward, the temperature ran a very irregular course within comparatively narrow limits, rarely exceeding 101°, and usually not going above 100°. The pulse varied between 100 and 120, and the respirations averaged about 35, never falling below 27, and on one occasion rising as high as 58. A blood count showed 2,944,000 red and 11,500 white corpuscles.

On July 6th the patient was aspirated and eight ounces of bright red fluid, macroscopically indistinguishable from pure blood, were removed. As he expressed himself as considerably relieved, it was repeated on the 9th, 11th, 13th, 14th and 17th, from twelve to twenty-five ounces being obtained each time without apparent decrease in the pleural contents. Symptoms of collapse almost invariably came on, which necessitated the withdrawal of the needle. During the week following the last aspiration he remained fairly comfortable, with but little variation in the physical signs, what change there was indicating a slight diminution in the pleural contents. On the 25th another attempt at aspiration was made which was only partially successful, but on the 28th the needle introduced below the inferior angle of the scapula drew off sixteen ounces. It apparently passed through a thick encapsulating wall. Thirty ounces more were withdrawn on August 7th. The fluid obtained during the later aspirations had grown progressively darker and showed less evidence of fresh blood. After consultation with Drs. Post and E. W. Dwight, he was transferred to the surgical side of the hospital and on August 11th the ninth rib was resected by the latter in the anterior axillary line and the pleura opened. Two pints or more of dark-red fluid escaped through the opening. Both the visceral and parietal layers of the pleura above the incision were lined by a light, white feathery coating about three-quarters of an inch thick, apparently a white clot. Below, the membrane was denser and of a spongy consistency. The cavity was washed out and a rubber drainage-tube inserted.

On August 15th it was noted that the discharge was considerable, hemorrhagic in character, containing a small amount of pus and of a somewhat offensive odor, but from the time of the operation he steadily improved, except for a slight set-back occasioned by an operation for the recovery of a drainage-tube which had slipped its moorings and became lost in the pleural cavity. A bit of the membrane was sent to Dr. Pearce for examination, who reported as follows: "A small, irregular, yellow, blood-stained mass consisting of dense fibrous tissue, with lymphoid and plasma cells. No blood-vessels. Many polynuclear leucocytes near surface. No evidence of tuberculosis or malignancy."

During the remaining weeks of his stay in the hospital he gained in color, weight and strength, but when he left, at his own request, on September 22d, a small sinus still remained, from which a very slight discharge still issued. The temperature had been normal for over two weeks. Soon after he left for the West and has been lost sight of.

A somewhat hasty search through the literature of the subject failed to discover more than two cases where a permanent opening was made for pleural effusions other than purulent. Both are reported by West, and in both the exudate was serous. Both were cases of long standing in whom repeated aspirations had failed to cure. Both recovered, although in one a long sinus still persisted at the time of the report, yet the patient was able to resume his regular work. The reason given by West — failure to improve after many months' treatment by aspiration — as having induced him to advise so radical a measure was only partially applicable to this case. Repeated aspirations had produced but little change in the physical signs during the seven weeks in which he was under observation; and the withdrawal of thirty ounces of fluid on August 7th, and the escape of a quart or more four days later when permanent drainage was established, showed that in spite of them a very considerable quantity still remained, but of more importance was the fact that under conservative treatment the patient was not doing well, apart from the behavior of the fluid; he remained greatly prostated, the anemia was very marked, and the temperature still ran a decidedly irregular course.

Other considerations which induced us to resort to radical measures were:

(1) The protracted course of the disease, in which an active inflammatory process was shown by the large amount of blood, which made it probable that if recovery took place the lung would remain tied up and unable to expand. This probability was strengthened

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by the discovery, by the aspirating needle, of the thick layer of fibrin covering the pleura, whose presence was positively demonstrated at the operation and which would have acted as a further barrier to complete pulmonary expansion.

(2) The probable etiology. The suspicion, which is justified in a large majority of cases of pleurisy, that the tubercle bacillus was the active agent was increased by the markedly bloody character of the exudate, as well as by the fact that it remained persistently sterile until four days after the operation, when a few diplococci, probably the pneumococci, were found on culture. Positive proof, however, was not obtained. Repeated examinations of the sputum were always negative and no evidence of tubercular changes in the lungs on careful examination either before or after operation was ever found. If tuberculosis were present, which in spite of all the negative evidence seems probable, it still remained practically a local one, and the curative effects of drainage of other serous cavities, similarly affected, encouraged one to hope that good might result here, while, if it were not present, the risk was no greater than in an operation for empyema and was worth taking for the additional lung capacity which it would give, leaving other considerations out of the question.

The second case was seen on March 11, 1899, in consultation with Dr. G. A. Bancroft, of Natick. The patient was a man about forty years old, who for several months had had a short hacking cough, and had lost somewhat in strength and flesh. About ten days previously he began to complain of pain in the left chest, of increased cough and dyspnea. Nausea and vomiting were also very prominent symptoms. In the course of a few days he became very much blanched. The temperature had run an irregular course but was never very high, rarely going much above 101°.

Physical examination showed that the left chest was filled with fluid, the heart being dislocated so that its right border was in the right mamillary line. The right chest was otherwise negative. A needle was introduced and over a pint of fluid resembling pure blood withdrawn.

He was more comfortable during the following few days, and when seen by Dr. Bancroft on the afternoon of March 1st appeared in fairly good condition, with a temperature of 100°, pulse 90, respirations 24. Early the next morning, however, he sat up in bed, complained of feeling very badly and fell back dead. No autopsy was obtained. From his history and general appearance the case was undoubtedly tubercular.

GASTRIC ULCER AT THE MASSACHUSETTS GENERAL HOSPITAL, 1888-1898.[1]

BY ROBERT B. GREENOUGH, M.D., AND ELLIOTT P. JOSLIN, M.D., BOSTON.

THE writers undertook the study of all the cases of gastric ulcer which entered the Massachusetts General Hospital in the ten years 1888–1898, with the hope of affording statistical evidence to the effect that a lasting cure was not obtained by medical treatment in a large proportion of cases. This study was materially aided by suggestions from Dr. J. C. Warren and Dr. R. H. Fitz, through whose assistance access to the hospital records and permission to report the cases was obtained.

Frequency. — Out of 13,097 cases, the total number of medical cases entering the hospital in the ten years 1888–1898, there were 187 cases of gastric ulcer, a percentage of 1.4 per cent. This percentage is somewhat higher than obtains in Baltimore (Cushing), Chicago (Capps), or Denver (Warren).

Sex. — One hundred and fifty-seven cases were in females and 30 in males, a proportion of five to one. Other statistics vary in this regard, but the proportion quoted by Fiedler,[2] based upon autopsy reports, of 14 to one, alone surpasses the large preponderance of females in the Massachusetts cases. No satisfactory association between the gastric ulcer symptoms and menstrual disorders could be determined.

Age. — The two extremes of age were eight and sixty-seven years. Between these limits, by far the larger proportion of the patients (75 per cent.) were between twenty and forty years of age, this being quite in accordance with other observations. The male cases averaged thirty-six and three-fourths years, and the females nearly ten years younger, twenty-seven and one-tenth years, and 113 of the females were under thirty years of age. Thus women are more susceptible to the disease at a period nearly ten years younger than are men.

Occupation. — Servant girls and cooks made up a large proportion of the female cases, 73 per cent. This is in accord with other statistics, and an etiological significance has been attributed to these occupations. But in fact these classes of society are represented in no larger proportion than in all the female medical cases admitted to the hospital, since they formed 75 per cent. of 216 consecutive admissions taken at random from the record. No weight can therefore be laid upon the occupation in this series of cases.

Symptoms. — The frequency of the chief symptoms in 187 cases was as follows:

	Cases.	Per cent.
Vomiting	179	95.7
Pain	173	92.5
Vomiting of blood	147	78.6
Pallor	131	70.1
Tenderness	130	69.5
Constipation	123	65.8

Vomiting. — The most frequent and practically universal symptom was vomiting, being recorded as absent in only four cases and doubtful in four more. The amount and the time of vomiting were subject to great variation, not only in different individuals but also in the same individual at different times. The statements of Ewald, Boas, Leube and others are at variance also in these particulars, and the hospital records are of no help in deciding the question. In general, however, the vomiting was recorded by the patient as following the ingestion of food, and at the height of the pain.

Pain. — Pain was felt in the epigastrium in 142 out of the 173 cases in which this symptom was noted, but in only 91 of this number was the pain confined to this region alone. Pain in the back was recorded in 41 cases, but only once was it referred alone to this locality. In only six cases was the pain felt to the right of the median line, but in 13 cases it was situated in the shoulders. One hundred and two patients gave the time of occurrence of the pain as following the ingestion of food, and were generally

[1] Read in part before the Boston Society for Medical Improvement, April 10, 1899.

[2] Cited by Ewald: Krank. des Magens, p. 383.

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