

The *urticaria* appeared at the end of the first week.

The *cystitis* was due to the use of the catheter, and washing out the bladder with one part styrene to two hundred parts of water, speedily caused it to disappear.

Venous thrombosis occurred in the left leg four times and in the right leg once. It came on in the fourth week in one case, the seventh in two cases, the ninth in one and the fifth in one. The typhoid had been mild in three of these cases, in one medium, in the other severe.

Edema of the leg came on in two cases at the beginning of convalescence. It disappeared in a few days, its cause was not apparent. There was no pain or tenderness in one case; in the other it was preceded by a darting pain in both legs of short duration, the next day edema occurred in the left leg. The pulse was normal in both feet of each case.

Hæmorrhage into the muscles.—This complication was seen in the right rectus muscle near the pubes in one patient in the fifth week of the fever. There was localized tenderness and swelling with ecchymosis coming on later. It took about fourteen days for the symptoms to wholly subside.

The hæmorrhage occurred in another case into one of the muscles of the calf of the leg during convalescence. The complication kept the patient from walking for ten days or more.

Deaths.—There were five fatal cases. Hæmorrhage was the direct cause of death in two: in the third the sudden occurrence of collapse, subnormal temperature, pallor, scarcely perceptible pulse and death within an hour, strongly suggested hæmorrhage. The other two cases were caused by peritonitis following perforation.

Treatment.—The diet consisted exclusively of milk in every case till the period of apyrexia began. Six ounces were given every two hours, as a rule, either plain, peptonized, or sometimes mixed with water. Vomiting did not occur very frequently and was usually easily controlled.

A daily sponge-bath was given for cleanliness. If the temperature rose to 102.5° a sponge bath of 65° F., was given every three hours. And for every additional .5° of heat shown by the patient, the temperature of the bath was diminished 5°. At 105° ice-water baths were given, and the interval between them diminished to an hour. If this had little or no effect in the diminution of temperature, phenacetin was given in four-grain doses (two grains or less to a child). The usual effect of the drug was to lower the temperature to about the normal point from which it slowly rose in from six to twelve or twenty-four hours to a point a little below what it had been before. It gave the patient a quiet, restful night, diminished the frequency, and increased the tension of the pulse, and never gave rise to the slightest unpleasant symptoms. It always made the patient feel more comfortable.

Cardiac stimulants were necessary in quite a number of cases. The best ones were found to be cocaine in $\frac{1}{4}$ grain doses every three or four hours, nitroglycerine one minim of the one per cent. solution every three hours (or $\frac{1}{100}$ grain in pill form), and a small dose of sulphate of atropia, given in the same intervals. These were found to be the best during critical periods for several days, given either in twenty-four hour periods or alternately in three hour periods. They proved themselves infinitely better than subcutaneous injections of brandy, and after a few trials were exclusively relied on, till a time when digitalis could be used.

ENTERIC FEVER AND TUBERCULAR MENINGITIS AT THE BOSTON CHILDREN'S HOSPITAL.

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THE twenty-five cases of typhoid which are tabulated in this paper were taken in their consecutive order from the house records, the only qualification necessary to be included in the series being a moral certainty of the correctness of the diagnosis.

The fact that malarial fevers, with which enteric is most likely to be confounded, are extremely rare in this city renders the diagnosis sufficiently easy in a large majority of cases.¹

It is, of course, impossible at times to distinguish typhoid from simple continued fever during the first few days; but a tender and tympanitic abdomen, the appearance of rose spots, or undue prolongation of pyrexia, soon lead one to suspect the real condition.

The same remark applies to tubercular meningitis, a dozen or more cases of which I have observed where the earliest symptoms of brain trouble appeared in children who were residents in the surgical wards. Nausea or vomiting, fever, headache, anorexia and constipation are symptoms common to the early stages of both diseases; and the table below shows the frequency of their presence in the cases to which I have just referred, as well as the dates on which symptoms pointing to brain disease were first noted. Of course, in cases of chronic surgical disease (which constitute a large majority of cases treated in this institution), tubercular meningitis is naturally suspected; and the table is given to show the earliest appearance of symptoms on the strength of which a differential diagnosis might be made if enteric fever had been apprehended.

	13	12	11	10	9	8	7	6	5	4	3	2	1	No. of caso.
11	1	1	1	1	1	1	1	1	1	1	1	1	1	Fever.
10		1	1	1	1	1	1	1	1	1	1	1	1	Anorexia.
8		1	1	1	1	1	1	1	1	1	1	1	1	Headache.
13	1	1	1	1	1	1	1	1	1	1	1	1	1	Nausea or vomiting.
7		1	1	1	1	1	1	1	1	1	1	1	1	Constipation.
5		6th	5th	2d				9th			2d			Inequality of pupils.
3						4th	10th					3d		Dilatation of pupils.
3						5th	4th				1st			Photophobia.
3						6th		7th		12th				Strabismus.
6						7th		3d		12th		4th		Retracted abdomen.
3										1st				Night-ories.
7										12th		4th		Tache cérébrale.
7										13th		5th		Convulsions.
2										5th		2d		Paralysis.
11										5th		1st		Irregular, intermittent or variable pulse.
17+ average	17+	17+	17+	17+	17+	17+	17+	17+	17+	17+	17+	17+	17+	Day of death.

TABLE I.

Fever was present in all the above cases at some period of the disease, but is not indicated unless noted before the fifth day. Nausea or vomiting (usually both) was observed, on or before the fourth day, in all

¹ I have seen but one case of malarial fever originating in Boston during eighteen years of practice.

cases excepting Nos. 4 and 13, in which it was noted on the eighth and fifth days respectively. The remark about fever applies also to anorexia. Headache was invariably an early symptom when noted. In both cases where night cries are given as present on the first day, they were recorded two or three weeks previous to the appearance of any other symptom. In Case No. 9 the pulse and temperature charts were unfortunately missing, while in No. 10 no pulse record was kept. It will be seen at a glance, that in one case only (No. 12) did suspicious symptoms fail to appear on or before the fifth day; and in this case inequality of the pupils was noted on the sixth day. Moreover, in this case the vomiting was of a persistent type rarely observed in typhoid. The last case in the table was sufficiently peculiar to warrant special mention. Here the first symptom was the occurrence of general convulsions, the patient (a boy of seven, who was an inmate of a surgical ward, and under treatment for hip disease) having several during twenty-four hours. This was on July 31, 1886. August 2d, the pulse varied from 60 to 120 to the minute, and ten convulsions were noted. In the intervals the child seemed well enough so far as his general aspect was concerned, and ate with fair appetite. On the 4th he began to

vomit, and retained scarcely anything given by the mouth during the ten succeeding days—was fed by nutrient enemata. Meanwhile, the attacks became less frequent; and on the 16th the record was, "No convulsions during past four days. Sleeps well. Appetite good." At this time his pulse varied from 85 to 140, and his evening temperature was 102° F. August 31st, he continued eating well. No more convulsions had occurred, but he had diarrhoea and began to show signs of emaciation. Temperature and pulse the same. September 8th, had slight nausea, but appeared well enough in other respects, although the evening temperature was 102.5° F. On the 9th, convulsions again set in, and by the 14th were so frequent that the intervals between them were of three or four minutes' duration only, when not under the influence of ether. He was thought to be dying, and the mother was so notified. September 15th the record was: "Very bright. Good appetite—ate eggs for breakfast, and asked for more." On the 26th he again had convulsions, which continued until October 1st, when death occurred. The urine was examined several times during the progress of the case, but nothing was found. It is possible that the trouble may have been brain tumor; but the age, presence of a cheesy

TABLE II.

No. of case.	Age.	Sex.	Normal morning temperature first noted.	Normal evening temperature first noted.	Highest temperature.	Day on which highest temperature noted.	Quietest pulse.	Rose spots first noted.	Rose spots not noted.	Nausea or vomiting.	Bronchitis, or Broncho-pneumonia.	Epistaxis.	Diarrhoea.	Acute delirium.	Abdominal tenderness.	Tympanites.	Abdominal pain.	Relapsed.	Day of relapse.	Duration of relapse.	Duration of illness.	Result.	REMARKS.
1	10	M.							1		B.		1	1	1	1					?	D.	{ No history obtainable. Died of perforation a few days after admission.
2	4½	F.	18th	20th	105.2°	10th	140	10th		N.	B.				1		1				41	R.	
3	10	F.			104°	9th	140		1	V.			1		1						102	R.	{ Passed bloody stools during nine days. Vomited blood on day of admission.
4	8	M.			104.3°	6th	120	8th		V.	B. P.			1		1	1				75	R.	
5	4	F.			101°	6th	125	7th			B.		1								39	R.	
6	7½	F.						14th				1		1	1						25	R.	
7	7	M.	28th	30th	104°	23d	148		1		B.				1						62	R.	
8	10	F.			107.8°	19th	140	10th			B. P.			1	1	1	1				77	R.	
9	8½	F.	23d	29th	104.2°	6th	112	9th							1	1	1				85	R.	
10	9	F.	21st	31st	103.8°	6th	140	9th		V.							1	1			83	R.	
11	7	F.	14th	17th	101.8°	9th	100	5th													37	R.	
12	9	F.	14th	16th	102°	10th		10th		V.											49	R.	
13	6½	M.	31st	35th	105°	6th	132	8th		N.	B. P.					1	1				76	R.	{ Tender and tympanitic abdomen during relapse. Highest temperature during relapse, 103° F.
14	10	F.	38th	38th	104.2°	33d	128	10th		N.	B. P.		1	1	1	1	1	1	41st	21	115	R.	
15	5	M.	41st	43d	105°	17th		5th		V.	B.										56	R.	
16	6½	F.	24th	27th	104.6°	7th	120		1	V.						1					67	R.	
17	4½	M.	28th	31st	104°	10th	120	21st		V.	B. P.		1	1	1						57	R.	{ During a period of one week, the pulse intermitted every fourth beat.
18	3½	M.	24th	30th	104°	6th			1	N.	B. P.				1	1					47	R.	
19	11	F.	16th	16th	105°	5th	132	10th			B.				1	1					43	R.	
20	7	F.	22d	25th	104.6°	6th	108		1			1						1	33d	10	70	R.	{ Highest temperature during relapse, 102°.
21	12	F.	20th	21st	105.3°	10th	120	5th						1	1			1	24th	25	91	R.	Do. do. 102.5°.
22	9	F.	24th	26th	104°	9th			1									1	29th	21	48	R.	Do. do. 102°.
23	8½	F.	14th	16th	104°	4th	118	15th			B.				1	1					57	R.	
24	12	M.	28th	54th	104°	10th	112	14th				1			1	1	1					R.	
25	11	F.			105.6°	6th	123	16th		V.	B.	1	1			1						R.	

focus in the hip, temperature and widely varying pulse, all point to tubercular meningitis. The duration of the case (sixty-three days), is very exceptional, but is far exceeded by that of one reported by Collins in the *London Lancet* of March 8, 1884, which lasted 104 days. The other cases are in no way noteworthy, with the exception possibly of No. 8, which is a good example of the explosive type of the disease, where the symptoms crowd in almost simultaneously, and death takes place at an early date.

Before making an analysis of Table No. 2, a few words of explanation are required:

Normal temperatures are given only when not due to the action of antipyretics. Under the head of "Bronchitis or Broncho-pneumonia," such cases are credited with bronchitis, as coughed but showed no evidences of pulmonary consolidation. Very possibly, in some of these, the cough may have been due to pharyngeal inflammation or laryngeal catarrh. Abdominal pain is noted only in cases where it was voluntarily complained of during the early stage. Relapses are dated from periods of apyrexia lasting for three days or more. This system is, of course, open to criticism; but I think it decidedly preferable to making relapses dependent upon the condition of the spleen (no case being credited with relapse unless the fever recurs after this organ has resumed its normal size), as being far less liable to give rise to confusion. I have not noted the cases in which enlargement of the spleen was observed, for the reason that the records in this particular are imperfect, three cases only being credited with this condition, whereas I can distinctly recall double this number. The "duration of illness" is probably considerably longer than it would have been in institutions less liberally conducted, for in many cases the parents were urged to allow the children to remain in the house until their physical condition should warrant their return to home diet and discomforts.

To return now to the figures given, we find that of the twenty-five cases, eight were boys and seventeen girls; average age, eight years. Normal morning temperature first noted in eighteen cases on the twenty-fourth day; normal evening temperature, on the twenty-eighth day. Average highest temperature in twenty-three cases, 104.2° F., observed on the tenth day. The quickest pulse in nineteen cases averaged 125. Average date on which rose spots were first noted (eighteen cases), tenth day. Rose spots not observed in 28% of all cases; nausea or vomiting observed in 48%; bronchitis (or rather, cough not due to pulmonary consolidation), in 32%; broncho-pneumonia, in 24% (all of which recovered); epistaxis, in 16%; diarrhoea, in 20%; acute delirium, in 28%; abdominal tenderness, in 64%; tympanites, in 52%; abdominal pain complained of in early stage, in 32%; relapses, in 16%. Average duration of relapse, nineteen days. Duration to date of discharge, in twenty-two cases (the last two in the table are still residents, but have been for some time convalescent), sixty-four days. Mortality, 4%.

One case of house infection (No. 25) occurred, notwithstanding care taken in disinfecting the discharges with carbolic acid, and the scrupulous cleanliness which characterizes the nursing under the Sisters of St. Margaret. The only case demanding notice beyond that already set forth in the table is No. 8. Here the temperature ran up to 107.8° F. on the

nineteenth day, and fell in a few hours to 101°. Nothing, aside from extreme prostration, was noticed, and stimulants were used freely. Three days later the thermometer registered 104°, from which it rapidly descended to a subnormal range, and the child had a convergent strabismus, dilated pupils, and well-marked *tâche cérébrale*. All these symptoms disappeared in twenty-four hours, and convalescence slowly followed. I am fully aware of the impossibility of drawing conclusions from so small a number of cases; but it is only by collecting a series of observations that important results are obtained, and these are published in the hope, that, when added to others, they may prove useful. As regards treatment, I should incline, during the acute stage, to a purely milk diet, frequent sponging with cool water, and the occasional use of phenacetine (so far as is known at present of its effects) in cases where a dangerous or uncomfortable elevation of temperature is present.

ON METHODS OF EXAMINATION IN MEDICO-LEGAL CASES INVOLVING SUITS FOR DAMAGES FOR REAL OR SUPPOSED INJURIES TO THE BRAIN AND SPINAL CORD.¹

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SENSORY SYMPTOMS.

Anæsthesia. — The best method of testing the sense of touch is by the finger tips. By a little contrivance the hand may be held so as to hide the finger, and the patient, even when not blindfolded, cannot see whether he is touched; moreover, the physician can thus regulate the strength of the touch perfectly. The compass æsthesiometer is of very little value.

In the majority of cases of traumatic neuroses the sense of touch is diminished in some part of the body, and it may even be absent. Exact hemianæsthesia, however, is rare. For simple diminution of sensation we have no criterion other than careful testing, but where absolute loss of sensation is feigned the strongest faradic current through a wire point or the actual cautery will usually prove too powerful to be borne. If the anæsthesia have a sharply defined boundary it is genuine, for my own experiments coincide with Dr. Putnam's in showing that it is impossible for a simulator to maintain such a boundary with exactness. The reverse of this does not hold, for the limit of anæsthesia in genuine cases may vary from day to day. The distribution of anæsthesia has also some value in localization.

The sense of locality is tested by making the patient indicate, with his finger, his eyes being closed, the part touched. The sensibility to pain can easily be tested by pricking with a pin. The sensibility to temperature can be tested by breathing and blowing upon the skin, or by applying teaspoons or test-tubes to the skin, heated or cooled. The sense of pressure can be readily tested by the pressure from the finger tips. All these forms of sensibility should be tested, for they may be affected even when the tactile sensibility is normal. Tabes, of course, presents the greatest number of anomalous forms of sensibility. The senses of pain and temperature are lost in syringomyelia. I saw a case of traumatic neurosis not long ago, where all other forms

¹ Concluded from page 600 of the Journal.