and be very moderate in smoking; nourishment was ordered in small bulk, but frequently. Eight days after first being called to see him he had a business meeting in his house, smoked, played cards, ate a good dinner, and went to bed feeling very well. Next morning he was awakened by a pain in his chest, flatulence, and vomiting. He had no marked pallor; constant wearing pain in left chest, midway between the nipple and the shoulder. Pulse 90, soft, regular, compressible; tension not increased or prolonged; no rigidity or thickening of arterial walls. Cardiac impulse not felt, area not increased, no cardiac tenderness, and the pain was not relieved by pressure; heart sounds normal but feeble. Tongue slightly furred, complete anorexia, continuous eructation with flatulent distension of abdomen. The patient did not remain still, and movements did not aggravate the pain. The pupils were equal and normal in reaction. The breast pain did not go up to the shoulder or down the left arm, and as some of the other characteristic symptoms of angina pectoris were wanting, and the pulse tension was already very slack, I did not give amyl nitrite, but administered at intervals two hypodermic injections of $\frac{1}{4}$ -gr. and $\frac{1}{4}$ -gr. of morphia. Digitalis, ammonia, and carminatives by the mouth were rejected; enemata failed to expel the flatulence, yet the patient expressed relief on eructation. The temperature was normal; there was no cough or lung symptoms. The stomach rejected all nourishment, and nothing beyond ice with whisky and soda was retained. During the day the breast pain diminished, but never entirely ceased. In the afternoon two hypodermic injections of caffeine were given. The patient felt well enough to get in and out of bed with but faintness or increase of pain. Towards midnight, after a turpentine enema and the application of turpentine stupes, the patient expressed himself as quite free from pain, and insisted on everyone retiring to rest. The pulse was 88 and regular. He remained quiet for an hour, and then asked for a pill of morphia (gr. $\frac{1}{4}$) as he could not get to sleep. While having his head raised to swallow it, he suddenly fell back, and, without a word, instantly expired, twenty hours after the first onset of cardiac neuralgia.

There was no necropsy, but the patient had the appearance of a man in whom the heart might be fatty and fatty. His father died of angina pectoris, after repeated attacks, at the age of 61. His mother died of apoplexy. He had never complained of heart symptoms, or had previously any serious illness.

CASE II.—A lady aged 50, had a mild attack of influenza two years ago. Feeling tired and aching after a long walk, she did not sleep well, and was up from early morning, with an acute pain in the epigastrium and an aching in both shoulders. She was pale, and evidently suffering; tongue clean; anorexia; no vomiting. The pain was referred to immediately below the ensiform cartilage; relieved by pressure. Pulse under 50, regular, compressible; heart sounds normal, area not altered, impulse not marked; no rise of temperature. I suggested the possibility of influenza, and only discarded the idea as I knew the patient had had several attacks of *embarras gastrique*. As morphia gr. $\frac{1}{4}$ produced no effect hypodermically, a $\frac{1}{4}$ -gr. was given and procured relief. After eight hours the pain, which had never quite disappeared, returned more acutely, and was referred to underneath the left breast. It was relieved by pressure; no cardiac tenderness. The pulse had fallen to 40, regular, but of alarmingly low tension. A hypodermic injection of caffeine and ether was given, and champagne and hot bouillon were pressed on the patient. In a few hours the pulse had risen to 50, but another morphia injection (gr. $\frac{1}{4}$) was required. Next morning the temperature was 99.5°; the breast pain continued, and as the pulse was over 50 and of fair tension I tried 2 minims of amyl nitrite by inhalation. The face flushed at once and the angina was instantly relieved; it returned, however, in a few minutes, and continued through the day. The flushed face remained; but this may have been explained by the rise of temperature, for by the evening it had reached 101.5°, while the pulse had risen to 70. The feverish symptoms yielded to salicin; the breast pain was sufficiently diminished to permit sleep, but for more than a fortnight and in spite of rest and treatment the patient was not free from cardiac pain.

CASE III.—A very spare lady, aged 61, who had already had two attacks of influenza; the first was in England a year ago; and the second last Christmas in Florence. In neither of these cases was breast pain complained of. On February 2nd she complained of headache, pains all over, particularly under the left breast. Temperature 101°, pulse 106. No marked pallor; face flushed readily on the slightest exertion; no increased or prolonged tension of the pulse; no cough and no chest symptoms. A belladonna plaster was applied over the apex, and digitalis and strychnine given. On February 9th (that is, after a week) the pulse had fallen to 80, and the temperature to 99°; the patient was allowed to sit out of bed. Next day the breast pain returned with double severity. It was constant and clutching in character; it had its maximum intensity under the left breast, but was also referred to both shoulders, particularly the left. There was a constant tendency to sigh, yet fear of drawing a long breath. Cardiac area not increased; impulse marked; sounds normal; marked tenderness in second left intercostal space and over the apex. The temperature was 101.4° and the pulse 130, regular, soft, compressible. The same evening, under the influence of two small blisters over the heart and 5 minims of digitalis tincture every four hours, the temperature had fallen to 100.2°, and the pulse to 108. Morphia was given both hypodermically and by the mouth; the pain slowly diminished during the following days, but not until a week had elapsed was the patient ever quite free from it. Digitalis, arsenic, nitroglycerine, amyl nitrite, and *nux vomica* appeared to make little impression on it; it "wore itself out."

In these cases there was no thickening or rigidity of the arterial walls; and in none was the urine abnormal. In none of the three cases was there dyspnoea, unconsciousness, convulsion, or excitement.

There was no doubt as to influenza being the immediate cause in all cases; although in the absence of an epidemic it might have been difficult to determine this. Predisposing causes were absent, except in the fatal case where excessive smoking doubtless acted injuriously on a heart which was

hereditarily vulnerable. In Case I the neuralgia came on after eight days of interval from the influenza attack; in Case II it appeared to precede it; and in Case III the manifestation of the two was simultaneous.

These cases would indicate that the influenza poison attacks particularly the nervous system, and may limit itself in its severity to one restricted portion of it. The bulb was undoubtedly attacked in all cases; in the first case the acute vomiting, and in the second the pain commencing in the epigastrium, point to the gastric fibres of the vagus being affected; while the local tenderness of the last case might suggest involvement of the cardiac plexus.

The absence of several symptoms removes these cases from the category of true angina pectoris—namely, marked pallor, coldness of the limbs, clammy perspiration, feeling of impending death, sensation of the necessity of keeping still, pain in the left arm, and increased and prolonged tension of the pulse. In addition there was no valvular lesion or evidence of degeneration of the vessels, and many observers consider one or other a *sine quâ non* of true angina. Their rebelliousness to treatment, and the fact that in once case sudden syncope occurred after the cessation of pain, point to the same conclusion. Dr. Walshe says that angina pectoris is rare before the 50th year, and excessively so before the 40th; also, that a first attack is rarely fatal. The influenza form of cardiac neuralgia would, therefore, appear to be at times more severe than the genuine "breast pang."

The indications for treatment are evident—rest and avoidance of heart strain. Where any premonitory symptoms are detected, as in the first case, digitalis and caffeine; and for the pain, morphia.

TWO CASES OF EMPYEMA QUICKLY FOLLOWING SIMPLE PLEURAL EFFUSIONS.

By S. A. BONTOR, M.D., B.S.,
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In the treatment of effusions into the pleural cavity there is an essential difference to be made when the fluid is simple (sero-fibrinous) and when it is purulent, for whereas a simple effusion is generally absorbed without trouble, this result is extremely rare, and in view of the condition which is left, hardly to be wished for in empyema. In any case of pleural effusion, therefore, we should endeavour to ascertain whether the fluid is purulent or not, and for this purpose there is nothing so certain or satisfactory (if proper precautions be taken), as the insertion of an exploring syringe, provided a definite result is obtained from the puncture.

Having however proved by this means that an effusion is not purulent, the question arises: Do simple effusions tend to become purulent? The late Dr. Wilson Fox expressed the opinion that a simple pleurisy has no tendency to become purulent; Ashby and Wright² say that "an empyema is as a rule an empyema from the first," although in children there is naturally an increased liability for inflammatory effusions to become purulent. Dr. Drummond, of Newcastle, in a paper recently published,³ says that in an inquiry extending over two years he had not met with a single case of simple pleural effusion that went on to pus; on the other hand, Dr. Eustace Smith states⁴ "that the fluid quickly becomes turbid, and in children purulent." The two following cases, which occurred close together in my practice, support this opinion, and I believe the early detection of the purulent character of the effusions, before the formation of coagulated particles, contributed largely to the recovery in each case after only one aspiration.

CASE I.—W. T., aged 2½ years, a fairly well-nourished but delicate boy, first seen July 26th, 1891, with broncho-pneumonia of both lungs, the left being more affected than the right, respirations 45, pulse 120, and temperature 102.8°. The illness, which was not very severe, progressed satisfactorily until July 28th, when the child appeared more distressed, and the pulse and respiration, which had been greatly reduced in frequency, increased again. There had been no change in the treatment, nor did physical examination reveal any adequate cause for this. The next day there was increased dullness at the left base, and as this increased an ex-

¹ BRITISH MEDICAL JOURNAL, vol. ii, 1877, p. 752.

² The Diseases of Children.

³ BRITISH MEDICAL JOURNAL, vol. ii, 1891, p. 113.

⁴ A Treatise on Disease in Children.

ploratory puncture was made, with every antiseptic precaution, the result being that perfectly clear, pale yellow fluid was obtained. For the next day or two there was a slight increase in the effusion, then for about three days it was stationary, the condition of the patient being satisfactory until August 5th, the seventeenth day of illness and the sixth from the diagnosis of the effusion; he then sweated a great deal during the night, and the appetite, which was improving, again fell off. The temperature was found to be 103°. As this state of things continued without any appreciable alteration in the physical signs, the exploring syringe was used again on August 7th, and this time pus was drawn off; aspiration was at once performed, and 8 ounces of pus obtained. From this time the recovery was good, and when the boy was examined eight months afterwards there was no difference between the two sides of the chest.

CASE II.—F. C., aged 7, a tall, thin girl, was taken ill suddenly September 26th, 1891, the initial symptoms being severe, the temperature going up to 105°. Physical examination did not reveal anything beyond rather harsh breath sounds, but on the third day some patches of consolidation were made out in the left lung, and for the next week the case ran the ordinary course of a broncho-pneumonia, the temperature gradually coming down to below 100°. On October 4th, the eighth day of the illness, the dulness at the left base was more general. As this increased an exploratory puncture was made the next day, perfectly clear fluid being drawn off. Two days after this the temperature fell to normal, and remained down for a week, but on October 11th it suddenly rose to 102°, and as it remained high for the next few days the exploring syringe was inserted again, and this time pus was found. The chest was aspirated on October 16th, the twentieth day of illness and the twelfth from the recognition of the effusion; 8 ounces of pus were obtained. After the aspiration the temperature fell to subnormal, and the child made a satisfactory recovery; three exploratory punctures made on October 28th, ten days after aspiration, all failed in finding any fluid whatever.

An interesting point in this case was that although aspiration was performed within a fortnight of the effusion becoming manifest, there had yet been time for some adhesions to form as evidenced by the flattening of the chest and a slight lateral curvature. As these adhesions in children frequently give way in the course of time, it was thought that this result might be hastened by a course of exercise; so as soon as the child was able to bear them she practised the extension motions of drilling, suspension, dumb bell exercises, and Busch's exercise for lateral curvature with the most satisfactory result, a cyrtometer tracing taken six months after showing almost perfect symmetry between the two sides.

MYELOID SARCOMATA OF UPPER AND LOWER JAWS: PARTIAL EXCISION OF LOWER, AND COMPLETE EXCISION OF RIGHT UPPER JAW.

By ALFRED PARKIN, M.S., M.D.LOND., F.R.C.S.,
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F.M., aged 3½, was admitted into the Children's Hospital on October 21st, 1891, for a large swelling in the floor of the mouth. No family history of importance. Had always been a strong healthy child, except for a few infantile complaints, until nine months before admission, when a swelling appeared above the front upper teeth, on the right side of the face. The swelling came without obvious cause, grew gradually to its present size, and was painless; it gave rise to no inconvenience except a slight deformity. Six months ago a second swelling appeared in the front of the lower jaw, and grew rapidly, displacing the teeth in its growth. Lately this swelling has begun to bleed, and from time to time a good deal of blood has been lost from it.

Upon admission there was a firm elastic swelling in front of the lower jaw, causing the lip to protrude, projecting backwards into the mouth, being only slightly prominent when the mouth was closed. It was oval in shape, and did not involve the floor of the mouth, but on account of its extending backwards for about 1½ inch, it so pressed up the tongue to the roof of the mouth that swallowing was difficult, and asphyxia probable in the course of a few days. The surface was smooth, with slight superficial ulceration in places. The swelling was clearly attached to the symphysis, causing some apparent thickening of the bone, which, however, felt slight. The incisor teeth on each side had been thrust out by the growth the width of which was about 1½ inch, and length 1½ inch. No glandular enlargement, no pain on manipulation.

Arising from the right upper jaw, above the lateral incisor and canine teeth, was a soft, globular, elastic swelling, firmly fixed to the superior maxilla, but not adherent to the super-

jacent structures. Surface quite smooth and bluish; no pain on manipulation; no blockage of nose; slight depression of front of palate. Superiorly the swelling gradually faded off with an indistinct margin about half an inch below the edge of the orbit. No displacement of the eye.

The swelling arising from the lower jaw, from its duration (six months), rapid growth, hæmorrhagic tendency, and soft elastic feel, seemed undoubtedly of a sarcomatous nature; it looked like a gigantic epulis, and did not appear to be a central sarcoma, judging from the slight apparent thickening of the bone and a tendency of the bone to pedunculation. On account of rapid growth and imminent danger to the child, who did not seem capable of existing another week if nothing was done, I determined, in spite of the existence of a second tumour, to operate immediately. The second swelling was the only evidence of dissemination.

Consequently, on October 25th, under chloroform, I proceeded to excise the portion of the lower jaw from which the growth sprang, that is that portion between the two first molars. A vertical incision was first made through the lower lip to the chin in the middle line, the soft parts dissected off the bone and the attachments of the muscles divided. The bone was then partially sawn through on each side, and the section completed by bone forceps. Hæmorrhage was profuse, but was soon stopped after removal of the growth. A silk suture was passed through the base of the tongue and through the neck to prevent the tongue from falling back. The lip was sutured and dressed with collodion and blue wool. A trochar and cannula inserted into the upper swelling gave no indication of its being cystic. The operation lasted thirty-five minutes.

The child did uninterruptedly well. The floor of the mouth was brushed over daily with a 10 per cent. solution of iodoform in ether. Highest temperature, 101.4°. Stitches removed about the tenth day.

On October 30th, five days after the first operation, the condition of the child being excellent, I proceeded to remove the right upper jaw, my intention being if possible to leave the orbital plate of the superior maxilla. An incision was first made through the upper lip and along the right side of the nose; the flap was reflected, all bleeding stopped, and the extent of the growth ascertained. After dividing the hard palate the superior maxilla was divided horizontally half an inch below the orbital plate. The lower three-quarters of the bone along with the growth was easily removed, and it was then seen that a portion of the growth extended up to the orbital plate. It was therefore necessary to continue the incision beneath the orbit, saw through the malar bone and nasal process of the superior maxilla, and thus remove the orbital plate with the remnant of the growth. The operation lasted thirty-five minutes; hæmorrhage was severe, and the child much collapsed, but recovered considerably in the course of a few hours.

The wounds both healed by primary intention; some opacity of the right cornea resulted, which at the time of writing had quite disappeared.

Six weeks after the operation the child developed a sharp attack of broncho-pneumonia, but soon recovered.

The discharge from both wounds remained perfectly sweet throughout, and practically ceased before the broncho-pneumonia came on.

Examination of the portions removed showed in each case a soft reddish gelatinous growth in the centre of the bone, arising apparently in the cancellous tissue, and "expanding" the compact bone on each side. In the lower jaw the growth had spread backwards into the mouth, and here was not confined by bone. The teeth had been pushed away on each side, and could be easily removed. In the upper jaw the growth had originated and spread between the two plates of bone forming the anterior surface of the superior maxilla, and the posterior plate had been so pushed back as almost to obliterate the rudimentary antrum, which could be recognised as a very small cavity posteriorly; the palate bone had been left behind, probably all the better for the patient. Both growths had been completely removed.

Microscopically each growth showed a stroma of firm fibrous tissue, with abundant small spindle and round cells, among which were many myeloid cells with a varying number of nuclei—in other words, a typical myeloid sarcoma.