brands of baby powder were obtained to act as controls. All the samples of powder of the brand used in Case 2 showed the presence of numerous anaerobic organisms, though *Cl. tetani* was not isolated, while the control powders gave no such growth.

The makers of the suspect powder were approached and submitted the various raw materials used in its manufacture. These were: aluminium silicate (kaolin), magnesium silicate, boric acid, and perfume. The last three ingredients proved to be blameless, but from the kaolin an anaerobic spore-bearing bacillus was isolated, which, however, proved to be avirulent on animal inoculation. The use of this kaolin in the manufacture of the powder was discontinued by the manufacturers.

Summary

Two cases of tetanus neonatorum are described. Investigation of the origin of the infection suggests that the dusting powder used in one case may have been the cause. The origin of infection in the other case remains uncertain.

Our thanks are due to Prof. N. B. Capon for permission to publish the case histories; to Prof. W. M. Frazer for permission to use the results of the public health investigations; to Prof. A. W. Downie for carrying out virulence tests on the post-mortem material, and to Prof. Sheehan for advice in preparing these notes.

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Medical Memoranda

Fat Indigestion in a Breast-fed Infant

This case seems worthy of record because the mother had a higher percentage of fat in her breast milk than I can find recorded, and because it demonstrates an uncommon cause of feeding difficulty in the breast-fed infant.

CASE HISTORY

The patient, a female infant aged 3 months, was brought to me with a complaint of vomiting, frequent large motions, and of crying after feeds. The birth weight was 8 lb. 8 oz. (3.85 kg.) and the weight at 3 months 12 lb. 13 oz. (5.81 kg.). The child was fully breast-fed with four-hourly feeds, and the history of vomiting and indigestion dated back to the end of the first month. At that time the vomiting was not troublesome, but it rapidly became quite severe; concurrently the motions became copious and more frequent than normal—up to five a day—but they remained normal in colour and consistency. Crying, with drawing up of the legs after feeds, became troublesome, especially in the latter part of the day, and in view of these findings the difficulty was thought to be due to overfeeding. The time at the breast was therefore cut down, boiled water being given before feeds to diminish the amount of milk sucked. These measures improved the vomiting considerably, the motions became more normal, and the rate of weight increase was diminished; this seemed to confirm the diagnosis of overfeeding.

At 2½ months, however, the vomiting became more severe again, the motions were frequent and green, and for the first time there was some weight loss. At 2½ months large friable curds began to appear in the vomits and in the motions, and a test feed at this time showed no evidence of overfeeding. The possibility of fat indigestion was considered, and this was confirmed by an analysis of a 24-hour specimen of breast milk, which showed a fat content of 7.4%. It was decided to wean the baby, as the mother had been losing weight steadily throughout lactation, and this was thought to be connected with her high fat loss through the milk. She made a point of saying that she took very little fat in her diet, and this corresponds with the finding of other workers that the diet has very little influence on the composition of breast milk.

The baby was weaned on to a modified National dried milk with a low fat percentage initially, and within a week the motions reverted to normal and the vomiting ceased, as did the crying after meals. The baby gained weight normally, and when she was last seen at the age of 8 months she weighed 18 lb. 9 oz. (8.42 kg.) and there had been no further difficulty with feeding.

A rather unusual feature of this case was that, in spite of a gross excess of fat in the breast milk, the indigestion was never severe enough to cause any significant loss of weight.

DISCUSSION

A survey of the composition of human breast milk in 21 cases of feeding difficulty in breast-fed infants was reported by R. C. Jewesbury (1937). He found a variation in the fat content of between 2.9% and 6.7%. The value of 7.4% in the case recorded above is unusually high, being 2.5% more fat than is present in Jersey cows' milk. The high fat value undoubtedly was the cause of the vomiting and curdy motions, as these cleared up completely after the infant was weaned. I would like to make it clear that weaning is not the usual practice in these cases, for they often respond to the giving of a protein preparation immediately before each feed and to being kept at the breast. In only a few cases is weaning necessary, and then as a temporary measure, the infant being fed on expressed breast milk from which the fat has been skimmed. Weaning in the above case was resorted to only because of the excessive loss of weight by the mother, which was thought to be due to the heavy loss of fat through the breast milk.

The method of obtaining the 24-hour specimen of milk is perhaps of importance, because the composition of breast milk is known to vary widely both with the time of day and even with the time during the feed at which the specimen is taken. This specimen was obtained in the following manner: at the 6-a.m., 2-p.m., and 10-p.m. feeds two teaspoonfuls were expressed from the first breast before the feed began and two teaspoonfuls from the second breast after the baby had finished sucking; at the 10-a.m. and 6-p.m. feeds one teaspoonful of the "middle milk" was expressed from each breast. These specimens made up the 24-hour sample, and the fat content of the total amount was estimated.

Finally, it must be emphasized that "the milk disagreeing with the baby" is a very rare cause of difficulty over breast-feeding, and that cases thus labelled, and so often weaned as a result, are most commonly really due to overfeeding or underfeeding.

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A Case of Multiple Embolism with Repeated Embolectomy

Below is recorded a case of repeated embolism in a patient with heart disease, in which embolectomy was performed twice within 14 days, with a successful result.

CASE REPORT

Mrs. J., aged 64, was admitted to St. Helier Hospital, Carshalton, at 12 noon on Nov. 23, 1946, having suddenly lost consciousness while on a trolley-bus with her daughter. At the time of admission she was completely unconscious, with stertorous breathing and generalized flaccidity. At 3 p.m. she regained consciousness and vomited some bilious material. It was then found that she had a past history of rheumatic fever in her teens, and had been taking digitalis at intervals over a long period. She had had occasional "dizzy spells," and at one time had been in bed for six months on account of heart disease.

On examination she was obviously an extremely sick woman, with dyspnoea, cyanosis, and marked oedema of the legs. The heart was enlarged, with signs of mitral and aortic disease. The pulse was irregular and the blood pressure 160/100. The liver was grossly enlarged, pulsating, and tender, and there were crepitations at the bases of both lungs. A diagnosis was made of advanced aortic and mitral disease with congestive failure and a small cerebral embolism.

At 5 p.m. on the same day the patient complained of coldness of the left hand. This was soon succeeded by pain in the whole limb, with definite duskeness of the skin. No arterial pulsation could be detected below the upper part of the left brachial artery, while the whole limb was blue, cold, and painful. The pulse at the right wrist was easily palpable. At this stage I was asked by the house-physician to see the patient. As she appeared to be desperately ill I waited for a couple of hours in the hope of spontaneous improvement in the left arm. After this time the local condition was no better, and an embolectomy was undertaken.

First Operation (Nov. 23).—Under local analgesia the brachial artery was exposed in its upper third. It was found to be pulsating in the whole length of the wound, and the embolus was not palpable. The adventitia was stripped from the artery, and a second incision

was then made in the lower part of the arm. The artery was here found to be contracted and non-pulsatile, and the embolus was felt under the upper corner of the incision. The artery was opened below the embolus, which on removal was found to be 3/4 in. (1.9 cm.) long. Blood was allowed to escape for a moment to wash the artery through. As the vessel was still in spasm suturing was by no means easy. The usual technique was employed.

Post-operative Course and Treatment.—She was given 200 mg. of dicoumarol and 10,000 units of heparin at once, followed by 5,000 units of heparin six-hourly for six doses. By this time the prothrombin index was 70% of normal and the prothrombin time was 44.4% above normal. Treatment for the heart condition was also employed. The patient was desperately ill for some days, and it seemed doubtful if she would survive. The pulse at the left wrist became faintly perceptible some fourteen hours after operation. She responded to treatment for her heart condition, and six days after operation her general condition was greatly improved and she had a strong pulse at the left wrist.

On Dec. 4 she had a sudden attack of dyspnoea with pain in the chest, which was attributed to a small pulmonary embolus; presumably thrombosis had also taken place in the right auricle. On Dec. 7 she had a sudden sharp pain in the right leg, which became cold and blue from the knee downwards. Pulsation was present in both femoral arteries and in the left dorsalis pedis artery. Vigorous pulsation could be felt in the right popliteal artery as far down as the middle of the knee-joint, where it ceased abruptly. A diagnosis of popliteal embolism was made.

Second Operation (Dec. 7).—Again under local analgesia the right popliteal artery was exposed and an embolus measuring 1½ in. (3.75 cm.) in length was removed from the bifurcation of the artery. Dicoumarol and heparin were employed in similar dosage to that after the first operation. The leg rapidly recovered normal colour and warmth, and pain was relieved. Although the dorsalis pedis was not palpable, it was obvious in a few days that the circulation of the limb was satisfactory. The wound gaped after removal of stitches and had to be resutured on Jan. 21, 1947, under local analgesia. The heart condition improved gradually, and no further embolism had occurred when the patient was discharged on March 10, able to walk and take a moderate amount of exercise. Throughout the whole illness she had been an extremely plucky and co-operative patient.

Most surgeons now recognize the merit of early embolectomy in such cases, but there may still be many practitioners in this country who are inclined to adopt conservative measures, thus losing the six to ten vital hours within which a successful operation may be performed.

I am indebted to the physicians of the hospital, especially Drs. Pounds and Jelliffe, who undertook the medical treatment of the patient.

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The "Kang Cancer" of North-West China

The "kang," or heated brick-bed, of Northern China has been described by many travellers, but the common and striking form of epithelioma associated with its habitual use has received little notice in the literature of malignant disease.

I spent the early part of 1947 at Lanchow, the chief city of Kansu Province in North-West China, and encountered "kang cancer" on five occasions; I was assured by many people that it is a common and widespread clinical entity throughout that area. The "kang," or oven-bed, is widely used by Chinese, Tibetans, and others to counteract the intense cold of winter in the high altitudes. It takes various forms, but is usually built of bricks or mud, and forms a hollow platform, 18 in. (45 cm.) or so in height, covered with loose wooden boards. Sometimes the boards have to be moved to make up the fire; sometimes an external grate in the outer wall of the house allows it to be stoked up from outside. The fuel used may be coal, charcoal, or dung. The whole platform is covered with felts and quilts, and forms not only a communal bed but the place where the occupants of the house spend their leisure and eat their meals.

From personal experience—I have, when travelling, slept upon kangs in both Chinese and Tibetan households—I can testify to the comforting warmth of such a bed, even though the hardness of the boards and the acrid smoke escaping between them may be somewhat trying at times.

"Kang cancer" is a squamous-celled carcinoma arising in the skin over the great trochanter, and is probably in most cases a malignant degeneration occurring in a chronic burn scar. It may be compared with the much better known "kangri" epithelioma of Kashmir, which is caused by the constant irritation of a small portable brazier. Occasionally the "kang cancer" may arise over the os calcis or the olecranon, but I have not seen it in either of these sites.

Of the five cases that I saw one was an enormous ulcer of the thigh and buttock associated with malignant recurrence after late surgery, three were papillomatous tumours with broad bases and without ulceration, and the fifth was a small scirrhous ulcer with a nodular floor and raised irregular edges. The first four occurred in middle-aged men and were all in the right hip region. The fifth was in a very old woman and was on the left side. All except the first were treated by radical excision and skin-grafting.

A TYPICAL HISTORY

Mr. S. K. Wang, a Chinese opium-smoker aged 60, came from Lo T'u village (Tsinghai). He stated that he always slept on a kang, in which he burnt horse dung, and that he always slept on his right side. His only complaint was of a lesion over the right great trochanter which had been present for four years. He was quite healthy, apart from a large papillomatous tumour (see photograph) growing in the skin over, but not adherent to, the right great

Fig. 1
Fig. 2
Papillomatous epithelioma ("kang cancer") in a 60-year-old Chinese opium-smoker.

trochanter. The inguinal lymph glands were not abnormally palpable and were soft. Operation was carried out on May 28, 1947, under spinal analgesia, and consisted of wide excision of the tumour together with 1½ in. (3.75 cm.) of skin all round and all tissues down to and including the deep fascia. Thiersch grafts were applied after three days, and the subsequent progress was uncomplicated.

COMMENT

The association with opium smoking is to be noted. A man is naturally more likely to burn himself unawares while under the influence of this drug, and it is presumed that the "kang cancer" is caused by chronic irritation (by friction and heat) of a burn cicatrix rather than by a carcinogenetic stimulant in the smoke. The development of epithelioma in scars has been known since Marjolin's classical description in 1828. Two types of epithelioma occurring in scars—papillomatous and ulcerating—were described by von Brunn (1903), and correspond with the two types in my five Lanchow cases. The prognosis of such epitheliomata is relatively good. This, as pointed out by Iwamoto (1926), is because the underlying scar tissue discourages penetration by the neoplasm, which tends instead to spread out on the surface.

My acquaintance with this lesion was made during a quite brief visit to inland China. I am sure that anyone interested in the condition and permanently resident in this region could easily collect a large series of cases and study in much greater detail this locally abundant tumour, which is easily amenable to treatment and should be both preventable and easy to detect in its earliest stages.

H. T. LAYCOCK, F.R.C.S.

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