the cultures remained sterile. It was the finding of these Gram-positive diplococci which suggested the use of Felton's serum, and the intravenous method of injection was selected as the safest. We do not think that the intracarotid method, which is recommended by Kolmer as being both easy and safe, is likely to appeal to the general practitioner. We feel unable to explain the presence of Gram-negative bacilli in the cerebro-spinal fluid on two separate occasions, as every care was taken to avoid contamination.

CONCLUSIONS

We do not presume to draw any decisive conclusions from our experience with one case, but it appears to us that a primary pneumococcal meningitis should be amenable to treatment with a specific anti-pneumococcal serum, whereas cases with a septic focus in the ears or accessory nasal sinuses are unlikely to be benefited by this treatment alone.

The immediate use of Felton's serum by the intravenous method seems to us to be a safe and valuable aid in the treatment of this condition. Early and repeated lumbar puncture appears also to be of the greatest importance.

Finally, we hope that our experience with this case may prove of some interest and help to professional colleagues.

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SEGMENTAL HYPERALGESIA ASSOCIATED WITH HAEMOPTYSIS *

BY

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In 1929¹ I showed that in diseases of the chest the existence of segmental hyperalgesia, or Head's zones, in the majority of my cases was definitely associated with haemoptysis. In this reference I should like briefly to present the following case.

A woman, aged 51, was admitted to the Ray Brook Hospital, New York State, on October 17th, 1930. The definite onset of her illness occurred with a series of small haemoptyses on June 12th, 14th, 16th, and 19th, the total amount of blood being about an ounce. She had been treated by complete rest in bed for four weeks, and modified bed rest until her admission. For the first two months in hospital she was afebrile and practically free from symptoms; she had only a slight cough and half a drachm of sputum daily, which was negative for tubercle bacilli by direct smear and guinea-pig inoculation. On physical and x-ray examination she was found to have a minimal lesion in the left upper lobe; latent rales were heard in circumscribed areas over the left upper lobe, both anteriorly and posteriorly. The right lung was clear. She was a well-nourished woman, intelligent, and somewhat highly strung, but Libman's sign (which is elicited by exerting moderate pressure over the styloid process, and may be used in estimating roughly the patient's threshold for painful stimuli) was negative.

On December 22nd the sputum was found to be slightly tinged with blood. This staining of the sputum continued for four days, and on the evening of December 26th she complained of a sudden sharp pain over the second left rib near the sternum; almost immediately afterwards she raised a drachm of bright red blood. Within half an hour of the haemoptysis she developed a dull pain in the left chest, which she described as "going right through the chest from back to front." She also said that there was a feeling of soreness in the back and front of the chest, and she volunteered the

information that, when she had had the recurrent haemoptysis in June, she had experienced a similar pain and soreness of the chest wall on the left side.

On examination it was found that she had well-marked areas of tenderness on slight pressure, as shown in the diagram. There was no definite hyperalgesia of the skin, such as I have found in about forty other cases of recent haemoptysis. These areas are segmental in type, and correspond to part of the cutaneous distribution of the third dorsal segment. It is not likely that they are due to underlying pleurisy, because there was no evidence of pleural involvement; further, it is not probable that the pleura would be inflamed in two widely separated and localized areas. I think there is very little doubt that these areas are topographically determined by the distribution of nerves, and are segmental in type. The patient had no further haemoptysis, and the tender areas could be elicited for six days, after which the dull pain and tenderness gradually disappeared. Since then she has had no more haemorrhage, and has not complained of any further pain in the chest.

It is an interesting fact that, in this case, there was no evidence of cavitation, either on physical or on x-ray examination. In the series of cases previously referred to where there was evidence that the blood was coming from a tuberculous cavity, no areas of segmental hyperalgesia were observed. This fits in with Head's observation²

Chest diagrams showing the situations of the anterior and posterior areas of hyperalgesia.

that, in what he calls the excavation type of phthisis, no hyperalgesia is found, and he offers the explanation that the nerve endings are destroyed, together with the lung tissue, and the first component of the reflex arc is abolished. In a few of my cases, however, a single localized patch of cutaneous hyperalgesia, sometimes with deep tenderness, was found on the anterior aspect of the chest wall directly over the cavity, and not necessarily associated with haemoptysis. I regard this single localized area as an example of the direct or pleural type of hyperalgesia due to the presence over the cavity of pleural adhesions setting up a localized or subacute inflammation of the parietal pleura.

But in the cases where the bleeding comes from a bronchiectatic cavity, segmental hyperalgesia is frequently found, presumably because the cavitation is due to the dilatation of a bronchus without destruction of the nerve endings. In these cases also, when the bleeding originates in the lower lobe, the hyperalgesia is found to involve lower dorsal segments, usually the fifth, sixth, and seventh, and occasionally the eighth. No areas of segmental hyperalgesia were found in those cases in which it could reasonably be assumed that the haemoptysis was due to congestion of the lungs, such as in mitral stenosis and other cardiac conditions; in pressure on the bases of the lungs, as, for example, in the later stages of pregnancy; in neoplasm of the lung, and in chronic pulmonary tuberculosis, in which localized congestion may occur owing to pressure on the pulmonary veins and venules by the contraction of fibrous tissue.

After some years of study of these cases I have come to regard the presence of segmental hyperalgesia in association with recent haemoptysis, and even in the absence

* Read before the Saranac Lake Medical Society, April, 1931.

of other definite clinical, radiological, and bacteriological evidence, as an early sign of a non-excavated inflammatory lesion of the lung. Its connexion with haemoptysis is, I think, accounted for by the fact that the latter is a common sign of inflammatory changes in the lungs. The blood vessels of the lung have a rich nerve supply, whereas the parenchyma, as far as investigations have shown up to the present time, has few sensory nerves or nerve endings apart from the bronchial plexuses. Further, the situation of the hyperalgesia usually indicates the site of the lesion and whether the bleeding comes from the upper or lower portions of the lung. Upper lobe lesions are connected with the third and fourth dorsal segments, and lower lobe lesions with the fifth, sixth, and seventh. The hyperalgesic areas are invariably situated, both anteriorly and posteriorly, close to the mid-line of the body, but those due to basal lesions are placed about two inches more laterally than the apical areas.

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² Head, Henry: *Brain*, 1896, xix, 153.

ACNE VULGARIS, A SYMPTOM, NOT A DISEASE*

BY

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The following remarks are occasioned by the preliminary findings in a number of cases of acne occurring in the young adult female of the working classes. The investigation is being made with a view to approaching the problem of aetiology as being a question of physical and racial type, and as being determined by the influence of urban life on these types. A number of very different aetiological factors for the disease are cited in the literature, and authors lay emphasis on each of them with varying stress. The commoner causes would appear to be certain changes of puberty—particularly menstrual disorders—seborrhoea, constipation, incorrect diet, unhygienic physical life, and lack of local cleanliness. In the present series of cases attention was paid to these factors and to many other possibly associated physical characteristics and social habits.

It would appear that acne is a symptom of various abnormalities, physical and chemical, elsewhere in the body. In the same way that the physician regards palpitation not as a disease but rather as a manifestation of cardiac, gastric, renal, pulmonary, or endocrine dysfunction, so should the dermatologist regard acne as evidence of irregularity in mode of life or dietary, or of physical ill-health in some distant organ or organs. That different cases have a different aetiology may be exemplified by the three following cases.

1. Miss S., an apparently healthy individual, aged 24, has on three occasions in two years developed an acute pustular acne of the face persisting for three weeks. Each outbreak was preceded by a definite period of malaise of about the same period.
2. Miss N., aged 25, suffers from a pustular acne which is only severe during menstruation.
3. Miss K., aged 24, had a pustular acne which came on suddenly at the age of 22, when circumstances compelled her to undertake a sedentary occupation.

Further, it is accepted that chemicals of the halogen group are capable of producing acneiform lesions. Kenneth Wills has recently reported cases in which the ingestion of pig fat appears to be the chief precipitating

factor, while all of us in industrial areas have seen cases of "oil grub" due to persistent exposure of the skin to dirt and lubricating materials. Of recent years suggestions have been put forward which appear to provide a common aetiology for the above different types. Barber has taken the attitude that metabolic changes consequent upon an altered mode of life may produce an environment which enables harmless saprophytes to become harmful parasites. Sequeira has mentioned the conception of "biotropism"—a faculty possessed by ingested substances of encouraging the vitality of superficial parasites. It would appear possible to combine the above two lines of thought and say that in acne, provided we have suitable terrain, a number of widely different intercurrent causes may produce identical clinical symptoms. To go even further than this, it may be suggested that inherent physical characteristics of the host will modify to a marked degree the clinical type, comedones only appearing in one individual and an acne nodularis in another.

With a view to investigating the accompanying manifestations of acne in other areas of the skin and in other systems the following form was filled in for every case.

Serial Number.....	Name.....	Age.....	Sex.....
O.P. Number.....	Marital State.....	Children.....	
Build and Physique.....	Occupation.....		
Type of Acne, Severity and Distribution.....	Colour.....		
General Health of Skin and Description of Type of Skin.....			
General Health of Scalp.....	General Moisture.....		
Presence of Ichthyosis.....	General Grease Secretion.....		
Peripheral Temperature.....	Local Grease Secretion.....		
Peripheral Colour.....			
Peripheral Moisture.....	Condition of Teeth.....		
Pigmentation.....	Hypertrichosis.....		
Constipation.....	Pulse Rate.....		
Thyroid.....	Onset of Puberty.....		
Amount of Exercise.....	Menstrual History.....		
Amount of Clothing.....	Onset of Acne.....		
Diet.....			
Remarks.....			

It is hardly within the scope of the present communication to mention in detail the reasons for the inclusion of the various points, but I think that it will be agreed by all that the majority are of value in determining physical type, general health, mode of life, and skin normality.

SUMMARY OF FINDINGS

Some of the findings in the first 100 cases appear of interest:

Fifty-five per cent. of the patients examined showed a general increase of sebaceous activity on face, chest, back, and scalp apart from any true comedones or pustules. The greater number of these scalps were stated to become "greasy" within five days of washing.

Constipation of a degree sufficient to demand the regular taking of aperients was complained of in 60 per cent.

Follicular perniosis, as shown by a pin-point hyperkeratosis with minute areas of capillary stagnation, was found on the pulvinar areas and posterior upper arms.

Peripheral cyanosis of greater or less degree was found in 28 per cent. of the cases, although the patients had been seated in a warm room for at least one hour prior to examination.

A marked "clamminess" of the hands was found in about one-third of the cases; this clamminess has been shown by the writer elsewhere² to be a rather misleading phenomenon. A palpable moisture on the hands does not necessarily imply any increased secretion of moisture. In the greater number of patients whose peripheral sweat loss was estimated exactly the secretion was actually below average, and appeared to be merely the result of a lowered peripheral temperature and consequent lessened evaporation.

Peripheral temperature, as estimated by the personal criterion, was raised very rarely indeed—a hand as warm

* Read in the Section of Dermatology at the Centenary Meeting of the British Medical Association, London, 1932.