SCHEID'S CYANOTIC SYNDROME.

(A Case Record and Summary of the Original Monograph of K. Scheid.)

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IN 1937 K. Scheid published a monograph dealing with certain episodic syndromes occurring within the framework of schizophrenic basal syndromes. This work was presumably designed as a preliminary contribution to the larger problem of the metabolic background of schizophrenia which Gjessing and others have emphasized as being the standpoint from which, in the present descriptive categorization of the schizophrenias, the immediate scientific future is likely to gain most advance. Wisely basing his attack on clinical syndromes, as opposed to biochemical observations, he selected two major clinical states, viz., the febrile cyanotic episode and the febrile stuporose episode.

The following case is recorded as an example of the form of the two syndromes:

The patient, aged 20, had a brother who, three weeks previously, had been discharged from a mental hospital with a diagnosis of depression for which he had been successfully treated. Returning home one evening on his cycle, he complained of feeling dizzy, and 15 minutes later he was dead. At the P.M. no abnormality was detected in any organ, and the cause of death remained unexplained. The patient here described was summoned home, attended his brother's funeral, and on his return back to duty was noticed to be depressed and somewhat dazed. Three weeks later he came into hospital and his mental state was that of a schizophrenic syndrome. He was dull, dazed, and only able to answer the simplest questions and then only after much delay. He appeared almost completely autistic and indifferent to his surroundings, but not stuporose. His expression betrayed fear and apprehension and there was a quality of increased watchfulness. He obeyed instructions in a general way and would accept nourishment. His characteristic attitude was sitting up in bed. He was actively hallucinated.

Physically he had a slight pyrexia on admission—99° F.—was moderately well nourished and had a tachycardia—120 per min. A faint presystolic murmur was audible at the mitral area. The tongue was clean, but the outstanding feature was the moderate degree of cyanosis of his face and hands. The C.S.F. was normal and a blood-count showed 23,000 leucocytes per c.mm. A blood culture was negative. Six days later a typical pericardial friction sound was audible and was diagnosed by five physicians: tachycardia had increased to 150 per min. From now onwards his condition rapidly deteriorated and the cyanosis became almost unreal in its intensity.

On May 10, 1941, a fine punctate purpuric rash appeared on his chest, and he required to be fed artificially.

Accompanying these tube feeds the patient's stomach was washed out, and it was noted how offensive, though not faecal, were the stomach contents.

By May 14 he had passed into a comatose condition, and the pericardial rub had disappeared. On May 19 he died. His temperature had been normal since 48 hours after admission, and at no time had there been any dyspnoea. The triad of mental change, cyanosis and tachycardia were the prominent features.

At the post-mortem examination the soft meninges were noticed to be very congested, the vascular channels being almost black in colour. Otherwise no abnormality was discoverable to naked eye or histological examination. There were small submucous haemorrhages with congestion at the oesophageal entrance to the stomach. The liver appeared yellowish and fatty to the naked eye, cut with some difficulty and weighed 1,460 gm.

I am indebted to Capt. Gartside, R.A.M.C., for the following report on the liver:

Macroscopic.—There is loss of normal architecture on section and the cut surface is rather yellow.

Microscopic.—Sections show a most intense fatty change, and practically no surviving normal liver cells are to be found. The fat is present both in large droplets occupying almost the whole cell, and also in fine droplets, the latter giving a foamy appearance to the cyloplasm of the cell. In most areas the cell nuclei are pyknotic; in other areas, in addition to the fatty changes, the cytoplasm of the liver cells is eosinophilic; other nuclei have almost lost their staining properties. There is some secondary leucocytic infiltration, especially in the areas showing the most intense degenerative change.

Reviewing this case the chief facts appear to be the sudden onset of a confused autistic mental state of schizophrenic pattern in a man whose brother had died suddenly and unaccountably three weeks previously. Following fairly rapidly on this mental alteration were the physical signs of cyanosis without dyspnoea, tachycardia, adventitious sounds accompanying the cardiac rhythm simulating those of pericarditis and a very mild pyrexia with a leucocytosis. Post-mortem yielded a fatty liver and the equivocal signs of venous congestion in the meninges. In deciding to classify this case alongside of those published by Scheid, it can be said that no alternative diagnosis appears to offer itself, and that the case reproduced Scheid's description with a high degree of fidelity. The explanation of the adventitious sounds in the heart lies presumably in the increased viscosity of the blood.

Though the credit for first drawing attention to the syndrome of cyanosis, tachycardia and fever, without dyspnoea, occurring in a schizophrenic setting must be given to Scheid, he himself makes it clear that he had found recorded instances dating back to long before his monograph—as far back as Schole in 1878, Schental, Meynert, Fritsch and Myer. Kraepelin deals with the total group in the seventh edition of his work, and Ladame and Redalie's "délire aigu idiopathique" as well as certain authors' "acute delirium" refer to the syndrome named after Scheid. The frequency of the syndrome is difficult to assess seeing that its boundaries are somewhat arbitrary, but from 1931–36, out of a total of 1,000 patients, some 22 cases appeared so clear cut in their syndrome characteristics and freedom from extraneous factors as to justify their classification within the group. The characteristics common to all these 22 cases

were as follows: "Following a prodromal psychotic illness there developed more or less in a fulminating manner the physical appearances of fever accompanied by a very rapid heart and cyanosis of a marked degree sans dyspnoea. These physical episodes last from two to three weeks, and have a noticeable tendency to fatal termination or else clear up leaving a mental illness." Acute, subacute and sub-chronic forms are encountered, and the syndrome can be subdivided into a haemorrhagic and a non-haemorrhagic variety. The final classification is as follows:

1. Febrile, cyanotic, episode ending fatally.
   (*a*) Haemorrhagic.
   (*b*) Non-haemorrhagic.
2. Non-fatal episodic febrile cyanotic schizophrenias.
3. Intercurrent febrile cyanotic episodes occurring in schizophrenia.

The clinical description of his case material is identical with that described above with one or two variations and permutations of secondary symptoms; thus urticaria, very high pyrexia and pulse rates (107° and 160), intense purpura, in some cases showing patches two inches across, sub-febrile cases in which the cyanosis and tachycardia established their claim for inclusion and one epileptic fit are mentioned. Although he mentions "embryocardia" he met no cases showing either extra systole or arrhythmia in his series, and makes no mention of adventitious heart sounds. Encephalitis, pneumonia and pulmonary embolism—the last very difficult to exclude—all present themselves in the differential diagnosis, but the C.S.F. is normal and there is no increased respiratory rate. He detected a tendency to its occurrence in relation to the menses; its occurrence in January and July; and in woman more than man in the proportion 7 : 1.

A study of the psychopathology and genetic factors yielded negative results except in so far as there appeared no justification for separating the syndrome's mental concomitants from other schizophrenias.

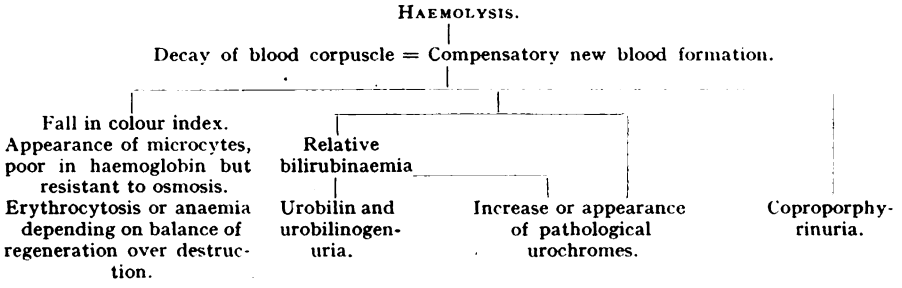
Post-mortem examination showed very little beyond venous engorgement of the parenchymatous organs. One case showed pale areas in the liver, and another showed submucous haemorrhages in the stomach.

For treatment Scheid was unable to suggest anything other than the symptomatic care of the circulation, using analeptics.

To all his cases he applied a very careful biochemical and serological scrutiny together with routine clinical and genetic studies, and the former included careful blood examinations, plasma protein and especially the blood and renal chemistry of the haemoglobin molecule. Summarizing his findings we have:

1. Fever.
2. Oscillations in total plasma proteins.
3. Deterioration of blood corpuscle.
4. Alteration in white blood picture.
5. Increased haemoglobin metabolites both in plasma and urine.

The syndrome thus viewed can be thought of as a haemolytic syndrome having reminiscent affinities to the findings of Gjessing, and moreover appears to inculpate the liver. In not one of Scheid's cases however was a hepatic lesion demonstrable as in the case here recorded. Considering, in passing, the possibility of a central determinant for the total syndrome and its setting in the light of Stoft's work and the possibility of the mental or central factor being the resultant of a primary metabolic (? haemolytic, ? hepatic) dyscrasia, he instances the fact that evidence of haemolysis can be observed prior to the mental change in some cases, and draws attention to certain clinically known haemolytic dyscrasias such as haemolytic icterus, paroxysmal haemoglobinuria, haematoporphyrinuria and toxic and infectious haemolytic jaundice—none of which is characteristically associated with a mental pattern of response. Finally he tabulates the following hypothesis of pathological sequence of toxic-factor—haemolysis—schizophrenia.



SUMMARY.

A fatal example of Scheid's syndrome in which the classical triad of fever : cyanosis sans dyspnoea : tachycardia, occurred in a setting of schizophrenia is recorded together with the histopathological findings of a fatty liver. A summary of Scheid's monograph is offered and a literal word-for-word long-hand translation of the monograph together with a summary has been deposited with the librarian of the Woodside Hospital, N. 10, from whom it is on permanent loan to the Librarian of the Royal Society of Medicine.

REFERENCES.

SCHEID, K. F. (1937), *Febrile Episoden bei Schizophrenen Psychosen.*