

that directly under the surface of the cartilage a very shallow tissue layer exists in which crystals are wanting, and in the layer immediately beneath this the crystals are most plentiful. He agrees with Sir Alfred Garrod that only two-thirds of the thickness of the cartilage is usually infiltrated, although exceptionally—as shown by Cornil and Ranvier—the whole cartilage may be infiltrated. With regard to the exact relation of the uratic deposit to the various elements of articular cartilage the cartilage cells are held to be the centres of primary deposit by Cornil and Ranvier, Charcot, Rindfleisch, Budd, and Garrod. Cornil and Ranvier consider that nutritive disturbances in the cartilage cells precede the deposition of sodium urate. Rindfleisch and Budd, however, consider that the cartilage cells do not take any active part. Some observers, including Sir Dyce Duckworth, consider that the deposition occurs quite indiscriminately, not selecting for its original site any particular element of the cartilage. Others, as Bramson, Rokitsky, and Auguste Foerster, think that urates deposit in the intercellular cartilaginous substance.

## THE ADMINISTRATIVE TREATMENT OF UNDEFINED CASES CERTIFIED AS SCARLET FEVER.

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In this communication we intend giving an account of the management of the undefined cases admitted to the City of Glasgow Fever Hospital, Kennedy-street, from November, 1895, to November, 1896. Prior to the former date there was no arrangement for the special observation of cases of this nature. The hospital, which is exclusively employed for the treatment of scarlet fever, consists of fourteen wards built on the pavilion system, and has accommodation for about 320 patients. The pavilion chosen for the purpose of isolation consists of three divisions separated one from another by brick partitions which extend from floor to ceiling, while each division has a separate communication with the outside. Two of them have a capacity of 16,500 cubic feet each, and the third of 8000 cubic feet. The last has also separate latrine accommodation and bathroom.

The patients sent to the pavilion were of three classes: (1) cases in which the appearances on admission did not justify a positive diagnosis of scarlet fever; (2) cases where the symptoms and appearances suggested some other disease—e.g., tonsillitis or non-specific erythema; and (3) cases of undoubted illness where the symptoms were obscure, but suggestive of some other infectious disease—e.g., enteric fever. Cases in which some other infectious disease was frankly present were immediately transferred to the Belvidere Fever Hospital without admission to the wards.

The two larger divisions were used for the first two classes, and the smallest division for the third class of cases. The whole pavilion was under the supervision of a very careful and experienced charge nurse whose powers of observation could be relied on, while each division had its special staff of day and night nurses. During their residence in the ward the patients were carefully observed for signs of scarlet fever, the urine being examined twice daily for albumin and evidence of desquamation carefully looked for. As soon as desquamation became definite or scarlet fever complications showed themselves the patient was transferred to a scarlet fever ward, where he completed the statutory period of eight weeks in hospital. Cases which did not turn out to be scarlet fever were kept in the isolation ward for a period varying with the nature of the case, but as a rule were not dismissed under four weeks, which we considered long enough for any such definite evidence as desquamation or nephritis to develop. None of the cases dismissed from the isolation ward were sent back to hospital with evidences of scarlet fever. The main objection which we have heard raised against the kind

of arrangement adopted by us is that now and again patients who ultimately prove to have scarlet fever are mixed with those who do not, and thus may infect the others. Our experience seems to show that this fear is more or less baseless, as no case of scarlet fever occurred in the isolation ward.<sup>1</sup> We tried to minimise the risk of infection by putting the patients at as great a distance from one another as possible and allowing at least 4000 cubic feet of air space to each. We also cautioned the nurses to take special care when attending a patient the subject of any inflammatory secretion by which infection might be carried.

The number of cases observed by us amounted in all to 45, and they fall into the following groups, of the more important of which we give typical examples. Of the 45 cases observed, 11 (24·4 per cent.) ultimately proved to be cases of scarlet fever, 6 (13·3 per cent.) belonged to the class of doubtful scarlet fever, and 28 (62·2 per cent.) were not scarlet fever. The last class was made up as follows: tonsillitis, 11 cases; non-specific eruptions, 4 cases; dermatitis, 2 cases; cellulitis, 2 cases; measles (?), 2 cases; rotheln (?), 1 case; broncho-pneumonia (one complicated with marasmus), 2 cases; gangrenous ulceration of throat, 1 case; general tuberculosis (?), 1 case; and not classed, 2 cases.

CASES 1 AND 2. *Examples of cases ultimately classed as scarlet fever.*—A girl, aged thirteen years, was admitted to hospital on Jan. 31st, 1896, with a history of illness beginning two days previously with sore-throat, sickness, and vomiting. A rash was said to have been seen on the hands. On admission there was no evidence of a scarlet fever rash and the temperature was 100°F. The faucial pillars and soft palate were injected, and there were specks of creamy exudation in the follicles of the tonsils. The glands at the angle of the jaw were slightly enlarged. On Feb. 6th characteristic desquamation was observed, beginning on the neck; slight albuminuria had been observed for a few days prior to this. The patient, who had been sent to the isolation ward on admission, was transferred to a scarlet fever ward, from which she was dismissed on April 4th.

A girl, aged six years, was admitted to hospital on Sept. 5th, 1896, with a history of illness beginning three days before with sore-throat. A faint rash was said to have been observed on the second day on the limbs. On admission there was no evidence of a scarlet fever rash; the temperature was 100·2°F.; the pulse was 100; the tongue was slightly furred; the fauces and tonsils were acutely congested and there was exudation in the follicles of the tonsils; and the cervical glands were slightly enlarged. No definite desquamation was observed in this case. The patient suffered from enlarged cervical glands, rheumatic pains in the joints, and (in the third week) albuminuria. On Oct. 4th she was transferred to a scarlet fever ward, from which she was dismissed well on Nov. 4th.

CASE 3. *Example of cases classed as doubtful scarlet fever.*—A girl, aged five years, was admitted to hospital on July 13th, 1896, with a history of illness beginning five days previously with sore-throat, sickness, and vomiting. No rash had been observed. On admission there was no evidence of scarlet fever rash. The temperature was 101·2°F. and the pulse was 120. Conjunctivitis and coryza were present; the lips were excoriated; there was herpes on the left cheek; the throat was congested generally, and the tongue slightly furred. A trace of albuminuria was observed for a day or two after admission, but not afterwards. Later a few pinholes were observed on the pads of the distal phalanges of the fingers, but there was no distinct desquamation. She was dismissed well on Oct. 21st, having been kept in on account of an accident.

CASE 4. *Example of cases classed as tonsillitis.*—A boy, aged nine years, was admitted to hospital on Nov. 22nd, 1895, with a history of illness beginning two days previously with headache and sore-throat. There was no history of rash. Two other members of the family, suffering from undoubted scarlet fever, were admitted to the hospital a few days before. On admission there was no evidence of a rash; the

<sup>1</sup> It happened during a press of work that one division of the isolation ward was used for a short time for cases of acute scarlet fever which had been sent in suffering from a concurrent attack of measles. The division was fumigated with sulphur and the windows were left open for two months before it was again used for isolation purposes. A case of simple tonsillitis was then placed there alone, with special nurses, and three weeks after admission the patient developed scarlet fever. The only source of infection at the time seemed to be the dust of the ward, and it has little bearing on our general contention.

temperature was 99.4° F. The throat was mildly, if at all, injected; the tonsils were chronically enlarged, and the tongue was covered with a thin white fur through which the papillæ appeared prominent. No desquamation or scarlatinal complication supervened, and the patient was transferred to the isolation ward on Dec 7th, from which he was dismissed on Jan. 1st, 1896, nothing having occurred to warrant the diagnosis of scarlet fever.

CASE 5. *Example of cases classed as dermatitis.*—A man, aged twenty-one years, was admitted to hospital on April 8th, 1896, with a history of illness beginning two days before with sickness and headache. A rash was seen on the second day. The patient said that he had had a similar condition before. On admission there was a general erythema of the forearms and of the legs below the knees. The tongue was furred and the throat generally was somewhat congested. The temperature was 100.4° F. A desquamation followed over the parts affected with the erythema. He was dismissed on May 5th.

CASE 6. *Example of cases classed as cellulitis.*—A boy, aged two and a half years, was admitted to hospital on July 15th, 1896. No history accompanied the patient. The child had been dismissed from the Belvidere Fever Hospital after an attack of measles on July 6th. On admission to the City of Glasgow Fever Hospital, Kennedy-street, a dark patchy rash was present on the chest, limbs, and ears; the lips were dry, cracked, and covered with crusts; the dorsum of the tongue was covered with white patches; the left cheek was swollen and glazed; but the mucous membrane of the mouth looked natural. The left forearm and hand were swollen, and the tissues of the upper arm and axilla were swollen and red and pitted on pressure. There was no albuminuria. The temperature was 103° F., the pulse was 160, and the respirations were 60. Free incisions were made in the arm, but the cellulitis spread, and death occurred on July 17th.

CASE 7. *Case of ulcerative inflammation of the throat (non-scarlatinal).*—A boy, aged three years, was admitted to hospital on Feb. 1st, 1896, with a history of illness beginning two days previously with sore-throat. There was no history of rash, and on admission there was no evidence of a rash. The temperature was 101° F. The fauces were injected, and the tonsils were large, the glands in the neck being slightly enlarged. The tongue was furred, but the papillæ were not injected. Coryza and conjunctivitis were present. Nothing suggestive of a scarlet fever or measles rash was observed. The local condition in the throat became worse with rapidly advancing ulceration and necrosis, resulting in death on Feb. 10th. A post-mortem examination was not allowed.

CASE 8. *Case of non-specific eruption.*—A woman, aged twenty-seven years, was admitted to hospital on Dec. 19th, 1895. The patient stated that an eruption had been observed two days before, unaccompanied by malaise or sore-throat. She had been eating some patent sweetmeat for some days before. On admission the temperature was 98.4° F. The throat and tongue were natural. There was a general erythema over the upper extremities; over the forearms, in addition, were numerous, slightly raised erythematous spots, fading on pressure. Over the legs below the knees and on the dorsa of the feet there was a general erythema, fading on pressure. On the extensor aspect of the thighs there was a distinctly punctiform mottling, while over the adductor aspect the mottling was retiform. It did not fade on pressure. The trunk was quite free from any erythema or mottling. In the course of four days the eruption had completely faded, and the patient was dismissed on Dec. 25th.

The cases which proved to be scarlet fever may be dismissed with the remark that the certifying practitioner having seen the case earlier had probably more definite and specific signs on which to found his diagnosis, Case 1 affording an example of this. We would call attention to Case 2; in this patient no desquamation was observed, though the child suffered from well-marked scarlatinal sequelæ—viz., enlarged cervical glands, rheumatic pains in the joints, and albuminuria.

Of the cases of doubtful scarlet fever we give Case 3 as a fairly typical example. A brother admitted at the same time probably had scarlet fever. He also was considered doubtful at first, but was after a time transferred to a scarlet fever ward on account of desquamation on the legs. He was dismissed from the latter after five weeks' residence without having contracted scarlet fever.

As regards cases of tonsillitis no great difficulty is experienced when they occur singly in a family none of the other

members of which are suffering from scarlet fever; but when they arise in a family in which one or more of the members are suffering from scarlet fever they are a cause of great anxiety to the physician in attendance. Attacks of this nature are considered by many authorities to be specific and infectious, and yet they do not seem to confer immunity on the person attacked. We have a good example of this in the family the case of one member of which is reported *in extenso* (Case 4). On the same day as Case 4 a younger brother was admitted. A day or two later an elder brother and a sister were also sent to the hospital. The history in each case was similar to that of Case 4, and on admission there was nothing observed but a tonsillitis. The sister and two younger brothers were transferred to the isolation ward on Dec. 7th, 1895, and were dismissed well on Jan. 1st, 1896, nothing having occurred to warrant the diagnosis of scarlet fever. The third brother was left in a scarlet fever ward, and after twenty-six days developed a typical attack of scarlet fever. Similar cases with a like sequel have been observed by ourselves and are doubtless familiar to anyone who has had charge of scarlet fever wards for some time. We have classified such cases under the heading of tonsillitis, though one might be justified in considering them as cases of aborted scarlet fever. The class of non-specific eruption includes, besides the case of which a synopsis is given above, one case of urticaria and two where an erythema of an indefinite character was present, but where neither the history nor the course of the case led to any reasonable suspicion of scarlet fever.

Of the unclassified cases, one patient was hysterical and the other was sent in from a public institution along with another child who was suffering from scarlet fever. She, however, neither had that disease on admission nor did she contract it.

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## ILLUSTRATIVE CASES OF APHASIA.

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(Continued from p. 871)

CASE 3 — *Complete word-blindness and marked agraphia; no hemianopsia; partial recovery; second cerebral attack followed by complete word-blindness, marked agraphia, and right-sided homonymous lateral hemianopsia; post-mortem examination; large lesion (softening) in the white matter of the left occipital and parietal lobes; the left angular gyrus intact; softenings in the right hemisphere, cerebellum, &c.*—In the following case the patient was suddenly seized with giddiness and mental confusion, but no loss of consciousness. In this state of mental confusion he mistook lead pencils and spectacles for money. This condition was followed by paraphasia, word-blindness and agraphia, and some loss of power in the right hand. When I first saw him, some eight months after the original seizure, he was almost completely word-blind and almost totally unable to write; his memory was defective, but he could understand everything which was said to him and could speak perfectly. From this condition he slowly recovered. Three months afterwards he had a second cerebral attack. The word-blindness and agraphia again became almost complete, and right-sided homonymous hemianopsia was now developed. I am consequently disposed to think that the lesion, which in the first instance had, I supposed, involved the left angular gyrus (visual speech centre), had extended more deeply into the white matter and invaded the optic radiations of Gratiolet. In this localisation I was mistaken, for the post-mortem examination showed that the cortical grey matter (angular gyrus) was unaffected, the lesion being situated in the white matter of the occipital and parietal lobes. During the time which elapsed between the patient's first coming under my notice and his death there were several additional seizures, and the lesions found at the post-mortem examination were multiple. It is difficult in such circumstances to draw accurate conclusions, but the point of interest is that the visual speech centre itself did not seem to be directly involved, while the power of writing was markedly impaired. Other points of interest in the case are:—1. That