AN ACCOUNT
OF THE
STRUCTURE OF A NÆVUS.

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THE nævus, the minute structure of which I am about to describe, was given to me by my friend Mr. Curling. It was situated upon the back of the hand of a young man, just below the carpal extremity of the ulna. The man stated that it had existed from birth. It was about the size of half-a-crown, soft, and of a bluish tint. In its centre the skin was thin. The veins on the back of the hand were rather larger than usual. It belonged to that class of nævi termed subcutaneous.

The entire mass of the abnormal growth was removed by excision, and the bleeding was very trifling. Two small arteries required ligatures.

The following elements composed the growth, viz.:

1. Areolar, uniting, or fibrous tissue.
2. Epithelium.
3. Capillary vessels and vessels of larger calibre.

1. *Of the Fibrous Tissue.*

The mass, before careful dissection, presented an irregular growth, apparently lobulated, consisting of fibrous tissue

which contained fat. When the fat and the uniting tissue were dissected off, several lobes, to the number of twelve, were recognisable. These lobes varied in size and in length, from between an eighth and three-quarters of an inch, and were attached by a kind of neck to the corium, but they were perfectly free upon all other sides.

Each lobe possessed a distinct and proper capsule, which at the neck became intimately blended with the fibrous tissue of the true skin.

The lobes, externally, resembled fibrous sacs depending from the corium, but both transverse and longitudinal sections exhibited clearly the internal structure of each. Short, thick, flat, delicate and strong fibrous bands intersected each in every direction without much regularity, although in some of the lobes a somewhat characteristic arrangement was discernible. In these a dense and well-defined central point existed, from which the bands or septa passed off, in a radiating manner, to the envelope or proper investing sheath.

Having encircled the neck of one of these lobes with a ligature, I inserted a tube and succeeded in distending it with air. The inflated lobe was removed and dried. Transverse sections exhibited very well the reticular character of the interior. Sections of other undried lobes display these cells, meshes or interstices very clearly. The cells communicate with one another on all sides, and they vary greatly in their size. They open at their peripheral extremity into large spaces, or what might be termed *reservoirs*, in the corium. At this point, however, the different lobes forming the abnormal growth do not all appear to communicate with each other.

2. *Of the Septa or Bands, or Laminae.*

The septa vary considerably in diameter. They are composed of a most delicate fibre tissue, wavy and regular. A particular kind of epithelium is arranged over their surface, being clear and well-marked in almost every place. The

arrangement becomes more defined after the action of dilute acetic acid. The epithelium is of the class termed pavement or tessellated, and the nuclei are remarkably distinct.

Sometimes it appears as if the epithelium were supported by a very delicate structureless membrane (basement membrane of Bowman?).

The nucleus fibres of Henle, the yellow fibrous element of other authors, are found scattered and mingled with the tissue of the bands.

Vascular Arrangement.

I was unable to inject the specimen from the small arteries supplying it.

At the time that I was dissecting the cellular tissue from between the lobes I carefully preserved several small blood-vessels, which I followed into the fibrous envelope of the separate lobes. They could not be traced into the septa, nor did they appear to open into the cells, although, perhaps, both these arrangements exist.

Again, upon dividing that portion of the proper envelope of the lobe, which, at its neck, intimately blends with the corium, a large space, or, as I have before termed it, reservoir, is seen, through which delicate filaments traverse from the corium to the septa of the lobe. Minute examination proves that these are delicate vessels, somewhat looped, and in many instances they were distended with blood-corpuscles. They appeared to be lost upon the septa.

These reservoirs communicate with veins, which are usually found more or less distended in the proximity of the abnormal growth.

Each lobe appeared to possess two or three small arteries. I did not find one vessel supplying two lobes, but each lobe received its own distinct vessel or vessels. These vessels presented the characteristic appearances of the vascular tissues, when acted upon by acetic acid and examined by a magnifying power.

Histological Relations.

The various names given to these tumours, and the resemblances which they are said to afford to normal tissues of the body, oblige me to state my opinion in regard to their histological affinities.

1. There is no more reason to give them the title of 'vascular or blood-vessel tumours' than many others which have received very different names.

2. They consist neither of small arteries, of small veins, nor of a mixture of these vessels,—tumours thus formed having their more appropriate names—aneurism by anastomosis, varicose veins.

3. They do not consist of erectile tissue, this term being understood to refer to such tissues as the *Corp. cavernosum*, *penis*, &c., because they do not present the appearances exhibited by these tissues under the microscope, the supposed *Art. Helicinae* of Müller, the unstriped muscular fibres according to Valentin, or the clear and distinct arterial capillary ramifications as described by Henle and Müller. Besides, all the cells communicate with each other within the lobes, an arrangement which cannot possibly exist in the *Corp. Cavernosum* and similar structures. In these there must be two sets of cells, one set which may be termed the venous from their connection with the veins, and another set which probably have no natural communications with vessels, but which, in the event of a blood-vessel giving way, receive the extravasated blood, and, becoming distended, give rise to permanent erection of the intromittent organ. However, they more closely resemble the *Corp. cavernosum* than any other tissue.

4. They must be classed with the fibrous tissues, being developed probably like them, nourished by arteries which may differ greatly in size, and possessing cells which are in communication with larger or smaller veins. Rokitsansky says that he has seen a tumour of this kind in communication with the saphena vein of the thigh, and there is a case

on record of a similar growth which was connected with the external jugular vein.

Practical Considerations.

If it be admitted that the description here given pertains to all, or, at least most, *true* subcutaneous nævi, the course of treatment to be pursued cannot fail of being tolerably clearly indicated.

In those cases in which the arteries supplying the lobes are large and their pulsation can be distinctly felt, the application of a ligature to the arterial trunk from which they come off may be required.

Their structure clearly indicates the necessity of *total* and *complete* excision, when this proceeding is determined upon; although I believe that the large openings described and regarded as veins, are not, in fact, such vessels, but merely an appearance produced by a section of one of the reticulated lobes.

This case being regarded as typical of these growths, it points to the necessity of adopting such treatment as shall effectually operate upon the entire mass, and not upon one or two of the lobes only.

The intimate communication subsisting between the reticular texture of the lobe and the veins, which are often very large, points to the danger which may result from injecting these growths with stimulating fluids.

The nature of the new growth being essentially fibrous, the great desideratum is the production, within its meshes, of such a degree of adhesive inflammation as will serve to obstruct the entrance of blood or its passage from one cell to another; or, the employment of such means as will, by creating greater disturbance, give rise to obliteration of the cells, or, indeed, procure destruction of the entire growth by suppurative inflammation.

The treatment of *nævus maternus*, as recommended and practised from the time of J. L. Petit to the present day, resolves itself into the three following methods:—

1. Entire removal, by excision ; or the adoption of such means as shall arrest the supply of blood, and produce a complete *sloughing* away of the abnormal growth or its destruction by ulceration.

2. The employment of such substances as will give rise to *suppurative* inflammation.

3. The production of *adhesive* inflammation within the lobes, and consequent obliteration of the reticulated interior.