AN ACCOUNT OF
TWO CASES
OF
BILIARY CALCULI,
OF EXTRAORDINARY DIMENSIONS.

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COMMUNICATED

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THE following cases relate to some interesting points in the pathology of the hepatic system, of which there are I believe, at present, but few recorded instances. They are extraordinary examples of the vast powers of the vis medicatrix, unaided by art, producing, in vital organs, most important, though scarcely suspected, changes, and which, however slowly, were yet ultimately successful.

CASE I.

In the latter part of Nov. 1820, I was called to visit widow Woodward, from whom I collected the following particulars. She was 55 years of age, of a spare thin habit, and melancholic temperament.

She reported herself to have enjoyed uninterrupted good health for years, until the last twelve months, during which she has been afflicted with an uncommon languor and prostration of strength, so as to render her unfit for her occupation, that of nursing the sick. About six months before, she was first seized with paroxysms of pain in the epigastrium, which generally commenced towards night, and continued for several hours. These attacks had returned every two or three weeks, for five or six successive times, and were for the most part, but not always, succeeded by slight jaundice, which commonly soon disappeared, and left her as well as usual. The pain was seldom very severe, and she had never applied for medical aid at these periods. About a month after the last attack of pain, she became the subject of continued fever. At this time (Nov. 26, 1820,) I found her labouring under the following symptoms; a small quick pulse, a foul tongue, anorexia, almost total privation of sleep, constipated bowels, scanty secretion of high coloured urine, and great mental irritability, almost amounting to complete alienation. She suffered no local pain whatever. In this state she continued, with little or no variation, until the 29th of October, when she was suddenly seized with severe pain in the left iliac region, accompanied by considerable tenderness on pressure. This urgent symptom continued unmitigated for sixteen or eighteen hours, after which she became suddenly easy, and soon passed a natural alvine evacuation,

which contained a calculus of extraordinary size. This was followed in a short time by an abatement of the febrile symptoms, but she remained in a state of low muttering melancholy for some months, from which she did at length recover, under the gentle and long continued influence of mercury on the system.

The calculus (see Plate V. fig. 1.) resembled a pigeon's egg in form, but was perhaps rather larger and more flattened. It was of a light yellow color, variegated with brown, and had very much the appearance of an aggregation of soiled particles of spermaceti. The surface was rough and tuberculated, and some of the largest elevations were striated longitudinally. On being broken, it exhibited a radiated and shining fracture throughout the facets of the radii, meeting in the centre, and having here and there interposed between them minute portions of a brown friable matter, particularly towards the middle of the calculus. There was nothing like a concentric laminated arrangement in any part of it. It possessed also the following properties :

Specific gravity, just exceeding that of distilled water.

Weight (next day), 162 grains.

Transverse circumference at the widest part, $3\frac{3}{8}$ inches.

Long diameter, $1\frac{3}{8}$ inches.

Short diameter, $1\frac{1}{8}$ inches.

When ignited, it melted, and burnt almost entirely away, with a strong fatty odour, leaving a very small black residuum. A quantity of it dissolved almost completely in boiling alcohol of the specific gravity. 850, and was deposited again on cooling in the form of beautifully delicate micaceous laminæ, which were re-dissolved on again applying heat. The small portion which was not taken up by the spirit, consisted of minute granular semi-transparent fragments, hard and resinous in appearance, and of a light red color, like shell-lac. Perhaps this may be considered as the coloring matter of the bile. Another portion was boiled in some liquor potassæ, which it tinged of a greenish hue, but it did not seem to have dissolved any, or very little. On adding to it some nitric acid, the solution remained unchanged in its transparency.

This calculus was different from any of the biliary species which I had before seen, in its wanting the laminated texture, and in containing a larger proportion of adipocire, or cholesterine, as Thenard has called it. Fourcroy affirms that some biliary calculi consist entirely of this substance. M. Robiquet, in an analysis of some calculi which he calls *intestinal**, discovered a quantity of phosphate of lime equal to half the adipocire. On treating the

* Journal de Médecine, Chirurgie, &c. Tome xxviii. p. 391.

remnant undissolved by the spirit, however, as he directs, no trace of this salt could be detected in this concretion.

From the comparative mildness of the symptoms proper to the passage of a large gall-stone, I was dubious, at first sight, whether the calculus was to be considered biliary, or of the nature of those which have been called intestinal. I have never seen an instance of the latter, but my chemical examination, though probably imperfect from inexperience of these processes, appeared to be tolerably decisive of its biliary origin.

In the early part of the present year (1822), I was again desired to visit this patient, and I found her labouring under the usual symptoms of hydrothorax in a severe degree, which, she informed me, had been gradually increasing for some time. No biliary derangements had occurred in the interval, so far as I could learn. The common course of treatment was adopted for her relief, but with no success; the urinary secretion could never be materially augmented, and she died on the 4th of March last, about a year and a half after she had voided the calculus.

SECTIO CADAVERIS.

I obtained permission to inspect the body on the second day after death. On opening the ab-

domen, the hepatic system was the first object of examination. The liver was of the usual size and appearance in respect to color, and seemed to vary from natural structure in nothing but in being rather more close and solid in its texture, and more resisting to the impression of the finger. The cystic and hepatic ducts were of the usual dimensions, but the gall-bladder itself was smaller and very much thickened, containing only a little pale unhealthy bile. It had contracted a strong adhesion, about the size of a shilling, to the duodenum, close to the pylorus. There was no uncommon appearance of vascularity. On removing these parts from the body, a communicating aperture, large enough to admit a crow-quill, was discovered in the centre of the adhesion. The duodenum and gall-bladder were afterwards inflated from the hepatic duct and preserved. From this the drawing (Fig. 2.) was taken. One kidney was studded with numerous flat tubercles in its cortical part. There was no other morbid appearance of any consequence except an accumulation of serum in the right cavity of the pleura, amounting to about $\frac{3}{4}$ xxiv. the peculiar symptoms of which had been unequivocal for some time before her death, and were considered as the cause of it.

After deciding that the calculus was of a biliary nature, it remained for theory to attempt the explanation of its passage into the intestine. During my first attendance upon her, I confess that I was inclined to conjecture, on this point, that it had pass-

ed by dilating the duct, and I believe I was not singular in resorting to such an explanation. (See a case in Vol. VI. p. 98. of the Transactions of this Society.) I have once seen the biliary ducts of very large dimensions, and I have heard of others who have made the same observation. It seemed to me easier to explain the symptoms by this supposition, rather than by the long and painful process of adhesive inflammation and subsequent ulceration of the parietes of the parts concerned. This, however, the dissection has proved to be the manner of its transition, for there can be no doubt that the aperture in the adhesion was once large enough to give passage to the stone in question. It has been properly suggested to me that it would not be altogether without its use to mention this contradiction of the theory by the fact. It may serve to inculcate the necessity of caution in those pathological conclusions which have not anatomical demonstration for their basis. In the prosecution of morbid anatomy we have not unfrequent occasion to observe changes of structure quite unexpected, as well as the apparent want of correspondence between the actual derangement of texture, and the previous indications during life. The circuitous, and often not painful, passage of pointed extraneous bodies, needles for example, through the thickest part of a limb, previous to their expulsion from the body; and the track of the restorative vessels over the longest diameter of the cornea to an ulcer, are familiar examples of inexplicable phenomena. The

process which nature often chooses to adopt in her mysterious operations is sometimes found to be that for which human sagacity can discover no adequate motive. "*Causa latet, vis est notissima.*"

CASE II.

Grace Adams, at 65, married. In the evening of the 24th of Feb. 1822, I was requested to visit this patient without delay, for she was considered to be dying. On my arrival her friends informed me that she had laboured under a total obstruction of the bowels since the 19th. Various measures had been resorted to by the medical attendant without success. I found her lying on her back, with the knees raised, the abdomen prodigiously inflated, with frequent gripings, the extremities cold and damp, and the pulse scarcely perceptible at the wrist. She was nevertheless sensible, though her articulation was indistinct, and her countenance did not at the time strike me with the hippocratic expression of a dying person. She vomited incessantly, and I was told had rejected every thing from the stomach since the commencement of her illness on the 19th, when the sickness had suddenly invaded her without any apparent cause. Thus the case seemed almost hopeless. I ordered her to have three drops of croton oil in two pills, of which she was to take one directly, and repeat it in four hours if necessary. She was desired to have warmth ap-

plied assiduously to the extremities by every possible means, hot fomentations to the abdomen, and in an hour or two a little wine. The first portion of the wine was vomited immediately, but some was subsequently retained. At the end of four hours she took the second croton pill. By this time the extremities had recovered a more equable circulation. On the following morning, the bowels had not been relieved, and she had been very restless and without sleep, but the stomach was more quiet than it had been. Some castor oil was next given, and at intervals a colocynth pill in combination with minute doses of opium. In the evening some thin offensive dark-colored stools had been procured, and the more immediately dangerous symptoms had subsided. Various purgatives and injections were persisted in, and after two or three days, evacuations, more natural in color and smell, were freely passed. The figured portions, however, were observed to be very small and somewhat flattened, which induced me to suspect that there might be a stricture in the colon or rectum, but in a day or two subsequent, full sized consistent stools contradicted that supposition. From this time she rapidly improved, and in about a fortnight from the time when I first saw her, she was able to leave her bed. At this time, I discontinued my visits, conceiving her recovery to be as certain as the precise nature of her disease had been unintelligible. A few days after this period (March 11), she brought me the calculus, Fig. 3, and informed me that it had come

from her suddenly while sitting at breakfast that morning, and that for the two preceding days she had experienced, almost constantly, a great degree of tenesmus and straining at stool, as if from the presence of indurated fæces; attended also with a griping pain in the abdomen, and a forcing sensation at the anus. It was now expected that the cause of these complicated ailments being at length obtained, all probability of future mischief was removed. But on the 17th of March the same train of symptoms recurred in a slighter degree, and in a few hours she passed the calculus, Fig. 4. Since this time the evacuations have been regularly inspected, but nothing more of the kind has been observed, nor has there been any reason to expect it. I have seen her this day (June 4th), and she tells me that she is moderately well, but complains of a considerable dyspnœa during motion, or the recumbent posture, accompanied also with a troublesome cough. Her legs, she says, are swollen at times towards night, and there seems reason to believe that the thorax is not altogether free in this case from hydropic accumulation.

With respect to the state of this patient anterior to the symptoms of obstruction, she gave the following history. For some months previous to the severe symptoms for which my attendance was requested, she had been frequently affected with a dull pain in the epigastrium, together with a great sense of weight and oppression in that situation.

These attacks commonly occurred towards bedtime, and varied in their continuance from half an hour to two or three hours. They were not accompanied by sickness, and were never followed, so far as she knows, by the slightest degree of jaundice. The paroxysms of pain, when most severe, produced great perspiration, and were relieved rather by an erect than a stooping position. Her bowels were generally regular without the aid of medicine. Her tongue was often foul, and her appetite indifferent. The pain would often come on for several nights successively, and for two or three weeks preceding the symptoms of obstruction, they had visited her every night, but were not much increased in severity. This affection had not much altered her appearance, which was that of a strong hard-working woman. She had tried various remedies with little or no relief, and had given up all thoughts of seeking for more, conceiving that her former ailments were no way productive of her recent illness. The pain and load at the epigastrium however are now gone, and she only feels the constriction across the chest, which is common to the degree of dyspnoea of which she still complains.

The calculus, Fig. 4, which was first passed, is of a singular form, being somewhat of a flat square shape, with its angles rounded, and the two sides of its greatest surface considerably hollowed out, as if compressed when soft by some convex body. It is curious too that on applying the most flattened ex-

tremity of the smaller round calculus, Fig. 3, to the deepest of these concavities, the correspondence gives the idea of former intimate juxtaposition. It (Fig. 4.) is nearly smooth and of a deep yellow color over the greatest part of its surface. It is obviously laminated, for in places the exterior layer is broken off, and displays beneath a dark brown matter, several successive layers of which are seen in the concavities where the attrition has been most considerable. The larger one, Fig. 4, weighs 176 grains, the smaller, Fig. 3, 159. Both swim in distilled water.

The smaller calculus is of a more regular shape, something similar to half a large pigeon's egg. It is studded over a large part of the surface with small irregular tubercles of a greenish hue, like fish-skin. In other parts, it is of a light ochre color, and perfectly smooth. The extremity which I have remarked to adopt itself so well to one concavity of the other calculus, has also a laminated texture, and the inferior layers are of the same dark brown color as the former,

In composition these calculi are, I should think, of the same nature as the majority of biliary concretions, of which they seem to possess all the external characters. They seem to me to contain a much larger proportion of the friable matter to the cholesterine than the calculus of the first case here narrated. I have been averse to destroy their integrity for the purposes of analysis, for there is to

me something more interesting in their form, and apparent mutual connexion, than in the nature of their ingredients. I shall not lose sight of this patient, who has been desired still to examine the contents of the alvine secretion, for I have sometimes imagined that there might be a third stone, which would complete the series of these curious products of morbid action. A comparison of these cases will lead to several interesting points of remark. In some respects they run nearly parallel. The sex and ages of the patients;—the comparatively slight degree of hepatic irritation excited;—the nocturnal returns of the pain in the epigastrium;—the trivial jaundice in one, and the total absence of it in the other;—the severity of the symptoms of the intestinal obstruction;—and the subsequent dropsical affection of the thorax, are obvious coincidences. The calculi in some respects are very dissimilar, though they have many properties in common. In that obtained from the patient Woodward, the cholesterine appears nearly pure, and its radiated arrangement is not more curious and beautiful, than difficult to conceive in its origin. The deposition by laminæ may very naturally be expected to result from some peculiar progressive effects of a vitiated and stagnant secretion. But on the formation of the radiated example I am incapable of proposing an explanation.

I have the honor to present these calculi for the inspection of the Society, through their secretary, Dr. Roget.

Fig. 1.

Fig. 4.

Fig. 3.

Fig. 2.

Drawn by T.B.

Engraved by J. Stewart