

*Fractured Ribs in Insane Patients.* By GEORGE J. HEARDEB,  
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marthen.

During the past year (1870), twenty deaths have occurred in the Carmarthen Asylum; and the following notes have been made regarding the state of the ribs and sternum in each case.

In ten instances the bony frame of the chest was in a moderately healthy condition; in the remaining nine an abnormal and diseased state was found to exist.

1. E. H., aged 61, female. Dementia. Ribs thin, soft, and very easily broken by the fingers.

2. W. M., 61, male. Chronic mania. The ribs were soft; greatly deficient in inorganic matter; easily bent to a right angle; and the fracture thus caused was imperfect, the periosteum remaining uninjured, no displacement of the bone at the seat of injury taking place, and no crepitation being elicited by ordinary manipulation. While removing the sternum it broke across at the level between the second and third ribs. The compact structure forming its surface was very thin and brittle; the cancellated portion was soft, spongy, and easily crumbled between the fingers, while parts of it were broken up and mixed with sanguineous pus. This man's sternum could readily have been fractured during life by pressure with the palm of a hand, or even by the point of a finger. The ribs were easily cut by an ordinary knife.

3. P. B., 68, male. Dementia with paralysis. Ribs very soft; easily broken, *in situ*, by slight force with a finger and thumb. Character of fracture the same as in the last case.

4. M. P., 36, female. Puerperal mania. Her ribs were in an abnormal state, thin and soft, and could be readily broken by the fingers. After removing the sternum and thoracic viscera, a rib was broken in the presence of one of the Carmarthen surgeons. The sternal end of the broken bone was supported while he examined carefully the outside of the chest; yet, though he knew exactly the position of the fracture, he was unable by manipulation to detect crepitation or any other sign of its existence. I mention this to show the difficulty, or rather the impossibility of detecting fracture of the ribs in

certain cases occurring amongst the insane. The notes on case 6 also bear on this point.

5. C. M., 70, male. Dementia. The sternum and ribs were greatly deficient in inorganic matter; and the ribs could easily be bent to right angles.

The characters of the fractures produced in the above five cases were identical.

6. A. W., 69, female. Dementia. Two surgeons from Carmarthen witnessed the post-mortem examination. The sternum broke across, between the second and third ribs, during removal. Its structure was similarly changed as in case 2. The ribs were very soft, and easily broken by the thumb and forefinger. The walls of the chest were scarcely more resistant than a sheet of ordinary card-board. A portion of a rib from this patient was submitted to Dr. Dyster, one of the visiting magistrates of this asylum, and he reports as follow:—"I have carefully examined the portion of rib you sent me. It appears to be of about the strength of stout card-board, and I apprehend would be fractured with as little difficulty. I do not see that there would be any means during life of detecting such a fracture without the use of such violence—or say force—as would be likely to produce it, if it did not already exist. I think the bone you sent me might be fractured by a very trivial cause—say falling suddenly against a table at which the person was seated, or any trifling accident of such a nature."

7. W. E., 56, male. Chronic mania. Ribs very fragile, and, with scarcely an exception, had all been fractured at various times. Each fracture was united by firm bony structure. The pleuræ were healthy.

8. H. G., 52, female. Acute mania. The sternum broke across during removal at the level between the second and third ribs. The surfaces of the bone were very thin; the cancellated structure at the seat of fracture was partially absorbed, leaving a cavity which contained unhealthy pus. All the ribs were thin, narrow, and broke with very slight pressure between the thumb and forefinger.

This patient had been in the asylum only about a month; and during the whole of that time had been very restless and excitable, and had frequently bruised herself by knocking her head against the wall, and in other ways. During the morning of the day of her death her restlessness and violence was such as to require the constant and undivided attention of two attendants. She died suddenly, and a coroner's in-

quest was held to ascertain the cause of her death. The examination of the body was made by Mr. Rowlands, F.R.C.S., of Carmarthen, who has made remarks of considerable value as to the state of her osseous system. They are as follows:—  
“I wish now to draw your attention to the following discovery I made whilst conducting the examination. In opening the chest and lifting up the sternum (the clavicles had not been disarticulated from it) I was surprised to find the bone at its junction to the upper piece bending and slightly cracking, rather than snapping asunder, as it usually does; and from the cracked surfaces about a teaspoonful or more of thick, red, grumous matter issued. I then exposed the ends, and found them soft and spongy. I next examined the conditions of the ribs, and was not a little astonished to find, upon bending them, how easily they broke. I tried four or five of the upper ribs on both sides, beginning at the third, and they all broke much in the same way, with very little force. The ribs were thinner and darker than natural, and the fractured ends had not the usual spicular appearance. Each rib bent first, and then gave way much like a piece of mill-board. I am convinced that if much restraint had been required for this poor woman, very little force, over the chest, would have sufficed to crush it in. The subject of broken ribs at asylums calls for, I think, especial enquiry; so many cases having lately occurred at different asylums that much uneasiness has thereby been created in the public mind, and has led to the belief that the poor creatures, who are placed in those institutions, do not receive the kind and gentle treatment they are entitled to; and that the supervision is left too much to those who have but little interest in their welfare, and who resort to physical rather than moral force to restrain the obstinate and refractory, and in their (the public) opinion the broken ribs are thus accounted for. Is it not possible and even probable that the diseased condition of the brain in insane persons, may have some influence on the nutrition of bone? The state of this poor woman's bones would certainly lead to that conclusion. It is a subject worthy of grave consideration and diligent investigation.”

Observation of the nature of the fractures produced in the above eight cases has convinced me that had any of the ribs been broken during life the injury could not have been detected before the post-mortem examination was made. As regards treatment, however, this is no drawback, there being no displacement, and no complete solution of continuity, the

necessity for employing a bandage is not urgent, and its absence cannot be prejudicial. Of course I do not mean in the smallest degree to insinuate that a bandage should not be applied if a fracture is discovered, or even if there is reasonable ground for supposing it exists.

In three cases there was disease of the sternum; and it is worthy of note that the abnormal condition was most marked at the same point, the level between the second and third ribs, in each case. Had a very small amount of force been applied over the chest of either of these patients during life a fracture would certainly have been caused; and the diseased condition would then, doubtless, have been attributed to the injury, and probably some innocent and worthy attendant held up to general opprobrium, or even, in the present morbidly excited state of public opinion regarding asylums, tried for manslaughter or murder.

9. The last case I have to remark on, the first which attracted my notice to the subject under discussion, has already occupied a large share of public attention.

On observing the fractured ribs in the case of Rees Price, I at once jumped to the conclusion that the injuries must have been caused by great violence applied to his chest by some persons or person other than himself; and that the pleurisy from which he had suffered was a result of the injuries thus produced. Further consideration of the facts of his case, viewed in the light of the results obtained from subsequent post-mortem examinations, affords evidence that both these conclusions are likely to be erroneous.

It is much to be regretted that the condition of the bones, as regards their fragility, was not carefully observed; yet, I imagine, sufficient facts can be adduced to prove that they were in an abnormal state. It was ascertained that there was no laceration of the soft textures at the seat of injury, no extravasation of blood, and no formation of callus or of pus. Further, that the fractures were all incomplete, the motion in each bone being that of a simple hinge; there was no displacement; and even after the removal of the sternum no crepitus could be produced by manipulation. Can it be supposed that eight ribs of normal consistence could be fractured without causing such an amount of injury to the surrounding soft parts as would necessarily be indicated by sanguineous effusion?

The injuries were doubtless caused by force applied over

the front of the chest, bending the ribs, and increasing their natural convexity.

There is no evidence to show that this patient was subjected to violent usage. There is abundance of proof that he was extremely restless, and that he was unable to stand without assistance during at least a week before his death. If, then, it be admitted, from observation of the nature of the fractures, that his bones were in an abnormal and softened condition, it is possible, nay, even probable, that the injury might have been caused by a fall on some flat surface.

It is no unusual occurrence for patients who are affected by cerebral softening to suffer, during the last days of life, from broncho-pneumonia. This condition is not rarely complicated with pleuritis, and was so found to have existed in the case of Rees Price.

Inasmuch as I cannot see how injury to the bony case of the chest, which has been insufficient to hurt the immediate lining of the bones, should yet be sufficient to cause inflammation of the subjacent membrane, it appears to me probable that the intra-thoracic disease, which existed in this case, was caused solely by defective nutrition of the parts affected.

If this case, as I believe, was another instance of the softened condition of the bones of the insane, then nine out of twenty examinations have resulted in the discovery of a markedly diseased state of the osseous system; and it is to be observed that this condition is not confined to any one form of disease, or to any particular age, and that it is found to exist in both sexes.

Much unmerited odium has been lately cast on asylum officials; and for the misconduct of one or two the whole class has been condemned. To me it appears marvellous that such a state of the bones, as related in the above cases, should have existed in patients who were often highly excited and violent in their actions, without the occurrence of fractures; and it is certainly indicative of the very great care that must invariably have been exercised towards them by the attendants under whose charge they were placed.

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