arrived there a shell fell at the feet of the artillery officer, literally blowing him to pieces. So great was the immediate shock produced on the general that he felt an almost overwhelming desire to bolt for his life. His nerve had completely left him for the moment. However, it so happened that he had been brought up from early childhood to have complete control of himself. It then flashed through his mind that, if he acted according to his first impulse, he would suffer severely from shell shock and be of no further use during the war. He therefore determined to remain, and, pulling himself together, quietly walked over to the spot where he and his brother officer had stood a few minutes previously. He stood at attention for five minutes, regained his nerve, and fought to the end of the war without suffering from shell shock. It is this self-control and sense of duty which we must endeavour to inculcate into every nervous child.

THE INCIDENCE OF ARTERIO-SCLEROSIS IN THE ARTERIES OF THE BODY.

BY

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THE following investigation was undertaken to ascertain which vessels in the body were most frequently and most extensively affected with arterial degeneration. The material examined was obtained from the dissecting rooms in the University of St. Andrews. The bodies were in an excellent state of preservation, and each was over 50 years of age. The method adopted was to dissect the arteries free from surrounding tissues, and to make a naked-eye examination in both longitudinal and transverse section. It is not possible to conduct an examination of this nature in the *post-mortem* room. Complete records of the incidence of arterio-sclerosis have not hitherto been published from dissecting rooms.

The pathological changes of which I took note were hardness and thickness of the vessel wall, the result of fatty or calcareous degeneration, a state which rendered the artery less capable of performing its proper functions.

With the naked eye there were seen projections of the inner coat, oval or circular, of a more opaque or yellow colour than the surrounding tissue. The patches, which were sometimes raised, varied in size from a hempseed to a shilling. In a few of the vessels the earliest naked-eye change was linear streaking. In many the intima was quite smooth, but on peeling it off a thickening of the media (with calcareous degeneration) was found. I did not make any distinction between sclerosis which commenced in the media or intima, as the established disease in either coat was almost invariably associated with secondary changes in the other. The changes which I took note of were observed by inspection and palpation, and included arterial decay of any form and from any cause.

Rokitansky and Lobstein, Thoma, Bellinger, and Clifford Allbutt have all conducted a similar investigation, but for certain reasons a complete examination of the body was not carried out. Clifford Allbutt reported, in his *System of Medicine*, that he examined 1,600 cases in the *post-mortem* rooms of Charing Cross Hospital, but only 380 were found to exhibit arterio-sclerosis, but then, "for some reason or other in 1,200 complete examination was not made."

I carefully made a naked-eye examination of all the arteries in eight bodies with the following results.

ABDOMEN.

The Abdominal Aorta (seven examined).—Atheroma was extensively present in six of the seven arteries examined, and the changes were more advanced in this vessel than in any other in the body. Only one did not show atheroma.

The Common Iliac Arteries (fourteen examined).—Ten of these were markedly atheromatous, especially in their upper parts, while the remaining four were not involved.

The Internal Iliac (Hypogastric) Arteries (fourteen examined).—These vessels were more subject to atheroma than the external iliacs. Nine of the fourteen examined were markedly involved, and the vessels on both sides were affected to much the same degree. In one of them the orifice was very much narrowed, and there was an aneurysmal dilatation of the vessel just beyond. Four did not show any sclerotic changes.

The External Iliac Arteries (fourteen examined).—Only two of these showed well marked atheroma. Five showed a few small patches, and six were quite free

The Coeliac Artery (seven examined).—Three of these showed patches of atheroma, with consequent narrowing of the orifices of the branch vessels. Four did not show any atheroma.

The Superior Mesenteric Artery (seven examined).—In four specimens the artery was narrowed at its origin by sclerosis, but a very prominent feature in my analysis was the comparative freedom from atheroma of the greater part of the main stem of the vessel, and the branches into which it divided: only in one ramus did I find a single patch of atheroma, and only in one subject was the main stem markedly affected.

The Inferior Mesenteric Artery (seven examined).—Except in one case the artery was absolutely free.

The Hepatic Artery (seven examined).—This vessel was extensively atheromatous in one case only, and in all the others it appeared to be healthy.

The Renal Arteries (fourteen examined).—Ten of these showed a moderate degree of degeneration. Four were not involved.

The Splenic Artery (seven examined).—Four showed fairly extensive atheroma in the main stem of the vessel. The orifices of the pancreatic branches were involved.

The Pudendal Arteries (fourteen examined).—Eleven of these showed atheroma in an extensive degree in the pelvic part of their course.

The Superior Gluteal Arteries (twelve examined).—Nine of these were very markedly affected. Their walls were extensively sclerosed, and the affection was usually bilateral.

The Inferior Gluteal Arteries (ten examined).—Six of these showed patches of atheroma, but they were not so much affected as the superior gluteal arteries. The remaining four were not involved.

HEAD AND NECK.

The Common Carotid Arteries (sixteen examined).—Just as the aorta was markedly atheromatous at its bifurcation, so the common carotid was extensively involved in the region where it divides into internal and external carotid branches. At its origin on the right side from the innominate patches were plentiful. The main trunk was found to be patchy, but in a much less degree. Fourteen of the sixteen arteries examined showed atheromatous changes.

The External Carotid Arteries (sixteen examined).—Only three of these showed atheroma to a moderate extent; the remaining thirteen did not show any.

The Internal Carotid Arteries (sixteen examined).—This vessel in the neck and carotid canal was subject to a very small amount of atheroma. The part of it which lay in the cavernous sinus was affected extensively. In eleven of the sixteen arteries examined this part of the vessel was affected with dense plates of calcareous degeneration, and was frequently sacculated.

The Subclavian Arteries (sixteen examined).—In eight of these atheroma was very marked. Usually the first part was more involved than the second or third part. Four vessels did not show any.

The Superficial Temporal Arteries (fourteen examined).—Contrary to my expectation this vessel was affected on the scalp in only two of fourteen examined.

The Internal Maxillary Arteries (eight examined).—Only two of these showed small deposits of atheroma.

The External Maxillary Arteries (ten examined).—Two of these on the face showed atheroma, and all the others were free.

The Vertebral Arteries (eight examined).—Two of these showed a large patch near their termination. Four were not affected.

The Basilar Artery (four examined).—In two of these atheroma was very well marked; two were not affected.

The Anterior Cerebral Arteries (eight examined).—Two of these showed atheroma, and six did not.

The Middle Cerebral Arteries (eight examined).—Four of these showed atheroma, and four did not.

The Posterior Cerebral Arteries (six examined).—Two of these showed atheroma, and four did not.

THE EXTREMITIES.

Lower Limb.

The Femoral Arteries (eight examined).—All showed well marked atheroma both in the femoral triangle and in Hunter's canal.

The Profunda Femoris Arteries (eight examined).—In one the artery was extensively involved, in five moderately, and in two it was healthy.

The Popliteal Arteries (eight examined).—All showed well marked atheroma, which extended to the termination of each vessel, and involved the origin of the tibial vessels. In two

cases the popliteal artery was more severely affected than the femoral.

The Posterior Tibial Arteries (six examined).—Five of these were affected, three of them very extensively throughout their whole course, causing great narrowing, and almost complete occlusion in some parts of the vessel. Only one was healthy.

The Peroneal Arteries (five examined).—Four of these were affected, two extensively, and the other two to a less extent. They were involved in the same bodies as the posterior tibial.

The Anterior Tibial Arteries (four examined).—Two were affected and two were free. These vessels are not so much involved as the arteries in the posterior crural region.

The Plantar Arteries (eight examined).—Beyond slight involvement of one lateral plantar at its origin from the posterior tibial artery, the vessels in the sole of the foot appeared healthy.

The Dorsales Pedis Arteries (four examined).—Two of them were extensively sclerosed, and two were not involved. The affection was most marked at the origin of the artery in front of the ankle-joint.

The Medial Circumflex Arteries (seven examined).—This artery was moderately affected in five of the seven examined.

The Lateral Circumflex Arteries (five examined).—This vessel was much less involved than the former. There was a small patch in one artery only.

Upper Limb.

The Axillary Arteries (twelve examined).—Only one was extensively affected, two were moderately involved; there were small patches in three others.

The Brachial Arteries (twelve examined).—Beyond a small patch in one they all appeared quite healthy.

The Radial Arteries (eleven examined).—Only in two was the artery affected, and it was limited to a part three inches long just above the wrist-joint. Eight were unaffected.

The Ulnar Arteries (twelve examined).—Only one of them had patches of atheroma, and it was limited to a part two inches long, just proximal to the wrist-joint.

The Palmar Arch was not affected in any of the twelve specimens examined.

THORAX.

The Pulmonary Artery (four examined).—I did not find atheroma in these vessels.

The Ascending Aorta (four examined).—Only one moderately affected; three were not involved.

The Arch of Aorta (four examined).—Three were involved to a small extent.

The Descending Aorta (four examined).—Three showed atheroma, one of these being very badly affected.

The Innominate Artery (six examined).—Four were markedly sclerosed, and two were not involved.

The Right Coronary Artery (four examined).—Three of these were affected to a moderate extent.

The Left Coronary Artery (four examined).—One was very badly affected; two were slightly involved, and one was free.

The Mitral Valve (four examined).—Three were affected, one extensively on both cusps.

The Tricuspid Valve (four examined).—I did not find any signs of atheroma on this valve.

Medium-sized arteries such as the lingual, external maxillary, superior thyroid, inferior epigastric, palmar, and plantar, did not present signs of degeneration which could be seen with the naked eye.

SUMMARY.

In any one body the distribution of arterio-sclerosis was variable. Its presence in one artery was no indication that arteries in other regions would be involved.

The abdominal aorta, common iliac, femoral, and popliteal arteries were more frequently and more extensively affected than any other vessels in the body.

The internal iliac arteries were more commonly involved than the external iliac arteries.

It was a striking fact that the mesenteric arteries were seldom the seat of degeneration. In one instance only was the inferior mesenteric artery affected.

The parietal vessels in the pelvis, especially the gluteal and pudendal arteries, were affected to a very marked degree. They offered a comparison with the visceral branches in the pelvis, which were seldom involved.

The portion of the internal carotid artery which lay in the cavernous sinus, and the part involving its bifurcation into anterior and middle cerebral arteries, frequently presented arterial degeneration of a very advanced degree. The vessel wall in this region was usually sacculated. Compare that with the cervical portion of the internal carotid, which was subject to a very small amount of degeneration.

The vessels of the lower limb were more frequently and more extensively affected with arterio-sclerosis than those of the upper limb. In one specimen only was the axillary artery markedly involved, and only in one brachial artery was a small patch of degeneration present. A very different condition was found in arteries of approximately the same calibre in the lower limb, where the femoral and popliteal arteries were extensively affected.

The radial arteries (when involved) showed degenerative changes just above the wrist-joint, but were not affected higher up.

The tricuspid valve and pulmonary artery were not implicated in any of the specimens which I examined. They offer a striking comparison with the mitral valve and thoracic aorta, both of which were found to be a frequent site of degeneration.

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Reviews.

DISEASES OF THE PANCREAS.

GROSS and GULEKE, in a treatise on the diseases of the pancreas,[1] have endeavoured to present a complete account, both from the medical and the surgical point of view, of our knowledge of the subject at the present time. Although based on the authors' own experience, the book gives consideration to the views of others, and, apart from being a storehouse of facts, indicates the present movement of thought in this branch of pathology. Comparing our knowledge to-day with that of twenty years ago, the authors have to confess that progress has been slow as compared with the advances made in some other branches of medical science, and the nature and treatment of many diseases of the pancreas still remain as obscure as they were at that time. In dealing with the subject of acute haemorrhagic pancreatitis, or acute necrosis of the pancreas, as the authors consider it would be more accurately termed, the various theories of the cause of death in that disease are discussed, and the view is adopted that it is due to poisoning by absorption of the pancreatic secretion. It has been shown that the implantation of sufficiently large portions of pancreas into the peritoneal cavity leads to death accompanied with all the symptoms of acute haemorrhagic pancreatitis; and a similar result is obtained if, by section and reimplantation of one of the ducts, part of the pancreatic secretion is diverted into the peritoneal cavity. Some further observations of Gross and v. Bergmann, to whom this view is due, tend to confirm it, for they discovered that an active immunity could be established by preliminary injection of increasing doses of trypsin, the fatal issue and the necrosis of the organ being thereby prevented. With regard to the treatment of acute haemorrhagic pancreatitis, although slight cases may recover while severe cases without operation are almost always fatal, it is unfortunately impossible to distinguish between them with any degree of certainty, or to be sure that a mild case will not have fatal sequelae. The authors therefore make it a rule to operate in all cases, and to operate as early as possible, irrespective of the existence of shock, which, in cases of any severity, persists till death. The aim of the operation being to relieve the tension in the pancreas and to drain off the exudates, a median incision in the epigastrium is recommended as leading most directly to the organ and permitting a survey of it and its surroundings in their entirety. Stress is laid on the importance of relieving the tension in all parts of the organ, and not merely in the obviously diseased portions, and of draining through the small omentum as well as through the omental sac and transverse mesocolon. During the last ten years the mortality after operation has declined from 60 to 56.6

[1] *Die Erkrankungen des Pankreas.* Von Dr. O. Gross und Dr. N. Guleke. Enzyklopädie der Klinischen Medizin. Berlin: J. Springer. 1924. (Sup. roy. 8vo, pp. viii + 383; 66 figures. Paper cover, 6.45 dollars; bound, 7.90 dollars.)