

Medical History

Thomas Bevill Peacock and the early history of dissecting aneurysm*

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On 25 October 1760 George II, then 76, rose at his normal hour of 6 am, called as usual for his chocolate, and repaired to the close-stool. The German valet de chambre heard a noise, memorably described as "louder than the royal wind,"¹ and then a groan; he ran in and found the King lying on the floor, having cut his face in falling. Mr Andrews, surgeon to the household, was called and bled His Majesty but in vain, as no sign of life was observed from the time of his fall. At necropsy² the next day Dr Nicholls, physician to his late Majesty, found the pericardium distended with a pint of coagulated blood, probably from an orifice in the right ventricle, and a transverse fissure on the inner side of the ascending aorta 3.75 cm long, through which blood had recently passed in its external coat to form a raised ecchymosis, this appearance being interpreted as an incipient aneurysm of the aorta.

Cases of dissecting aneurysm

Although Morgagni³ also described similar cases it was not appreciated during the next eighty years or so that the condition differed from the saccular aneurysms (later recognised as syphilitic) with which physicians were familiar. It was not until 1802 that Maunoir⁴ describes the blood "dissecting throughout the circumference of the aorta," and the term "anevrisme disséquant" was coined by Laennec⁵ in 1826.

In 1809 Burns⁶ described the case of a man aged 56 who was suddenly seized with a sensation about the sternum "as if a bone had stuck in his throat." Despite a temporary improvement, he died four days later. Necropsy findings showed that he had died from haemopericardium attributed to a rupture of the right atrium. An irregular vent 1.25 cm long was present in the ascending aorta, through which blood had passed into an aneurysmal sac extending from the root of the aorta to the origin of the innominate artery, the sac being formed "between the proper and cellular coverings." A further case was described by Hodgson⁷ in 1815; a 70-year-old woman died from haemopericardium ascribed to rupture of the right ventricle, and the findings in the ascending aorta were similar to those in Burns's patient. It is questionable whether the haemopericardium really arose from the right atrium and ventricle in these cases and in George II.

*Based on the presidential address given to the Section of Medicine of Manchester Medical Society on 6 October 1976.

In 1822 Shekelton⁸ from Dublin described cases of chronic dissecting aneurysms in the abdominal aorta in which a re-entry opening was found in the common iliac artery. In 1824 Otto⁹ described a young healthy girl who suddenly developed violent pain in the anterior chest, lost consciousness, rallied temporarily, but then died the next day. Necropsy findings showed a stricture of the aorta with a bicuspid aortic valve, and immediately above a tear through which blood had forced its way under the outer layer of the aortic wall, and into the pericardial sac. This is the first description of coarctation of the aorta complicated by dissecting aneurysm.

Thomas Bevill Peacock

Thomas Bevill Peacock (1812-82) was born of Quaker parents at York.¹⁰ He studied at University College and St George's Hospitals in London, qualifying in 1835. After travel abroad and periods at Chester Infirmary and Edinburgh Royal Infirmary in 1843 he settled in private practice in London, and a few years later he was largely responsible for the foundation of the City of London Hospital for Diseases of the Heart and Lungs (later to become the London Chest Hospital). In 1849 he became assistant physician at St Thomas's Hospital, and in 1860 full physician. He is best remembered for much painstaking work on congenital heart disease, which resulted in his book *On Malformations of the Human Heart* in 1858,¹¹ in which he described several cases of Fallot's tetralogy many years before Fallot (1888).

Peacock's first series

By contrast his splendid work on dissecting aneurysms has received little attention, and yet he portrayed a remarkably complete account of the condition.^{12,13} In 1843 he collected all the published cases, adding a few of his own, to a total of 19. He noted that patients with dissecting aneurysms were usually older than patients with saccular aneurysms. He also contrasted the sex ratio of saccular aneurysm (which was then male:female 4:1) with that of dissecting aneurysm in which by chance females accounted for 10 of the first 15 cases described. Peacock noted that "the coats of the aorta are, in a healthy state, capable of extreme distension before giving way . . . the rupture of the internal coats of the vessel . . . must be ascribed to their being rendered lacerable by disease." He described experiments¹⁴ in which fluids were injected between the adventitia and media of the aorta and found that the fluid readily penetrated the cellular tissue between the two layers, and distended the outer layer for a great distance along the course of the vessel. He noted that the canal thus formed tended to reopen into the original vessel rather than to burst externally, and that in three cases re-entry

had occurred constituting what he described as an "imperfect natural cure of the disease."

He also clearly recognised the difference in prognosis between dissections arising in the ascending aorta compared with those in the descending aorta. "When the fissures were near the origin of the aorta . . . the extravasated blood readily makes its way into the sac of the pericardium . . . and death is almost instantaneous. . . . When the fissures are situated below the arch of the aorta, the blood . . . tends to separate the coats in the lower portion of the vessel and rarely makes its way to its origin; and thus the disease . . . may be in no degree accessory to the patients' death."

In 1855 Dr Swaine of York¹⁵ diagnosed the first case in life. A man aged 51, previously known to have mitral and aortic regurgitation, developed suddenly a violent pain "as though his chest were torn open from side to side," that immediately spread to below and to the left of the umbilicus. There was transient loss of power in both legs and brief loss of consciousness. The femoral and popliteal pulses were absent, and a mass "the size of a goose's egg" became palpable over the bifurcation of the abdominal aorta. Dr Swaine diagnosed a dissecting aortic aneurysm, but although the patient improved, he died from congestive heart failure three months later. Necropsy findings showed an unruptured distal dissecting aneurysm extending to the aortic bifurcation.

Peacock's second series

In 1863 Peacock¹³ reviewed 80 patients from British, French, German, Italian, and American reports. He now realised that the proportion of women was not so high as he had previously thought, but was still, however, much higher than in saccular aortic aneurysm. The mean age was 54.9 years (range 17-95); men (mean age 52.1) tended to be younger than women (mean age 59.1). All the patients except Swaine's had been diagnosed at necropsy, and 64 (85%) of the series had proximal dissections—that is, arising in the ascending aorta or arch. The illness was usually brief. Of 56 patients whose particulars are known, 42 (71%) died within 24 hours of the onset of symptoms, and nine (15%) within seven days. Only five patients survived more than three months, the longest survival being 11 years. The clinical and pathological details reported by Peacock were extremely comprehensive. Two patients were pregnant, two presented with hemiplegia, and two with paraplegia. These are now well-known aspects of dissecting aneurysm. Four patients had coarctation of the aorta and three a bicuspid aortic valve (of whom two had coarctation).

Comparison with today

A comparison of Peacock's series with a series compiled from 1951 to 1976 from hospitals in Manchester¹⁶ showed many points of resemblance (table I). Patients with dissecting aneurysm are now older than in the nineteenth century, mainly owing to the increased mean age of the general population; a

TABLE I—Comparison of Peacock's 1863 series with the present day. (Percentages in parentheses)

	Peacock (1863) ¹³	Leonard and Hasleton (1979) ¹⁶
No of cases	80	171
% of women	44	36
Mean age (yrs)	54.9	59.6
Proximal dissections	54	56.8
Distal dissections	65	62.2
Site of dissection:		
Proximal	65 (81)	60 (35)
Distal	8 (10)	80 (47)
Abdominal	3 (4)	10 (6)
Uncertain	4 (5)	21 (12)
Multiple dissections	5 (6)	10 (6)

further factor is the greater proportion of patients with distal dissections found in later series. Surgical correction of coarctation of the aorta will avert dissection in some younger patients, and medical treatment of hypertension may prevent or postpone dissection. The mean age of Peacock's proximal dissections was appreciably younger than his distal dissections, and when Leonard and Hasleton's series was re-examined the same was still found to be true.

Peacock's patients mostly had proximal dissections, beginning in the ascending aorta, or occasionally in close relation to the origin of the innominate artery (table II). Most (72%) of his

TABLE II—Proximal dissections in the two series. (Percentages in parentheses)

	Peacock (1863) ¹³	Leonard and Hasleton (1979) ¹⁶
No of cases	65	58
Extent:		
Ascending aorta and arch	47 (72)	15 (26)
Descending aorta	9 (14)	9 (16)
Abdominal aorta and beyond	8 (13)	33 (57)
Uncertain	1	
Rupture:		
Pericardium	55 (85)	43 (74)
Mediastinum	5 (8)	3 (5)
Pleural sac	1 (2)	5 (8)
Right atrium	1 (2)	0
Unruptured	5 (8)	9 (16)

proximal dissections were confined to the ascending aorta compared with 26% 100 years later. The reason for this difference is not apparent. Both series show the pronounced tendency for proximal dissecting aneurysms to rupture into the pericardial sac. Distal dissections (table III) were either much rarer or not diagnosed in the nineteenth century for they comprised only 10% of Peacock's cases, compared with 47% 100 years later. In both series about one-third died without rupture of the dissecting aneurysm. Some distal dissections extended proximally to the root of the aorta, occasionally rupturing into the pericardial sac—often a cause of confusion between proximal and distal dissections, and one that may have important therapeutic implications.¹⁾

TABLE III—Distal dissections in two series. (Percentages in parentheses)

	Peacock (1863) ¹³	Leonard and Hasleton (1979) ¹⁶
No of cases	8	61
Extent:		
Ascending aorta and arch	4 (50)	15 (25)
Descending aorta	4 (50)	22 (36)
Abdominal aorta and beyond	4 (50)	35 (58)
Uncertain		2 (3)
Rupture:		
Pericardium	1 (12.5)	7 (11)
Mediastinum	2 (25)	13 (21)
Left pleural sac	3 (37.5)	25 (41)
Right pleural sac		7 (11)
Pulmonary artery	1 (12.5)	
Retropertitoneal		7 (11)
Unruptured	3 (37.5)	18 (30)

In both series 6% of the patients had multiple dissections, some contemporaneous and some successive. Perhaps this implies a widespread abnormality in the aorta predisposing to dissection; what this may be remains a mystery.¹⁷ Today we understand little more than Peacock of the aetiology of dissecting aneurysm. Now that it appears that cystic medial necrosis is not the essential factor predisposing to dissection,¹⁷⁻¹⁹ Peacock's uncertainty about the nature of the aortic disease is still with us. His conclusion in 1843 is no less apt today. "It is indeed probable that, as two cases have fallen under my own observation in less than twelve months, the affection may be of more frequent occurrence than the small number of published cases would lead

us to suppose, and that no long time will elapse before the materials are sufficiently extensive to afford a full history of this interesting form of a very important class of diseases.”

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MATERIA NON MEDICA

Head bending

The explanation given by Dr Stoddart (19 May, p 1336) as to why the lettering on spines of books differs in Britain and America intrigues me. Having been an avid reader of detective novels I have a large number of green Penguins. There appears to be no rhyme or reason concerning the lettering on their spines. American authors published by Penguins have the lettering in both directions. Many of the Penguins have in small print on them “For copyright reasons, not for sale in USA,” and this too bears no relationship to the way the lettering lies on the spine. Could the explanation for the rule concerning lettering on the spines lie in the difference between the way Americans bend their heads when “necking” and the way Britons bend their heads?

Nearly 25 years ago in Dublin, while assisting at an operation, I commented on the fact that an American girlfriend tended to bend her head to the left when necking, whereas my Scottish and Irish girlfriends bent their heads to the right. A very well-known lady anaesthetist who was looking after the top end of the patient promptly challenged me to carry out a survey of all the nurses in the hospital and any other females who would oblige to find out whether they bent their heads to the right or left when necking.

The results of the survey were rather surprising in that I found that most American and Continental girls bent their heads to the left. There was no relationship whatsoever between left-handedness and this tendency.

One explanation which was offered was the position occupied by couples necking in the front seats of cars. American and most Continental cars are left-hand drive. The inclination adopted by the head has a direct relationship to the arm round the partner's shoulder and it is usually bent away from the arm. In cars with a left-hand drive, the man's right arm is round the woman's shoulders and so he bends his head to the left. In British cars the left arm is round her shoulders and consequently he bends his head to the right. Girls quickly learn to bend their heads in such a direction as to allow both themselves and their partner sufficient nasal airway. If the man is the driver and therefore on the right, as in British cars, the girl's head is bent to the right and conversely bent to the left in left-hand drive cars with male drivers. Americans in Britain quickly adapt to our custom as do Britons in America. The only aberrant women were those who drove their own cars.

Reading books by couples in the front seats of cars has not been studied but I am convinced the lettering on the spine does not matter so far as those people are concerned. What method do the Chinese adopt for the lettering on the spines of their books?—JAMES M DUNLOP (district community physician, Hull).

Paradise lost and not regained

It's a long way to Honolulu from New Zealand; in fact it's a long way to Honolulu from anywhere. Pan Am flight 812 from Melbourne, Sydney, and Auckland pulled up at the gate at 8 am. “Right on time

folks” said the captain. “Welcome to paradise” echoed the enthusiastic chief steward.

After a long night's journey into day, the tired but relieved passengers emerged into the brilliant light, blue skies, and balmy air. The jungle close by was not arboreal but the all-too-familiar concrete; covered by scurrying cars, it stretched for miles along Oahu to Diamond Head, the haven of wartime submariners. It stretched to Maui, to Hawaii. No doubt it would have stretched further were Hawaii not the last of the island chain.

The fall from paradise, the disgrace, have been wonderfully described by Michener. The descent goes on. Today Maui is being desecrated in the name of progress.

The questions are, as before, how and where and when and why? The first question is, who really did discover Hawaii? Michener makes a strong case for the Tahitians, in their canoes, leaving Bora Bora 800 years ago. Their feats of seamanship and navigation humble those of all European seafarers, Vikings excepted, until the year 1492. Centuries later in 1776, Captain James Cook is said to have been the first European to discover the Hawaiian Islands. Whether this is true or not is debatable, for surely it is unlikely that the Manila and Acapulco galleons, on their annual voyages across the Pacific, never left course to sight the great twin volcanic peaks of Mauna Loa and Mauna Kea on Hawaii. However, the Spaniards certainly did not colonise the islands.

The Hawaiians realised that Cook was not the god they had thought he was, but a threat. In retrospect, he signified the end of their life-style. Whether he “discovered” Hawaii or not, the greatest of navigators was killed on the Kona coast of Hawaii. His simple monument may be one to our civilisation. After his death the Hawaiian Islands were rapidly colonised and Westernised: Hawaii became an American dependency, and the United States made Pearl Harbour the headquarters of its Pacific Fleet. One hundred and seventy-five years after Cook, Admiral Yamamoto's bombers broke through the cloud banks over the Oahuan mountains and almost, but fortunately not completely, destroyed the US battlefleet.

This led to years of war, battles on many Pacific islands, and finally to the terrible retribution at Hiroshima and Nagasaki. Since then the world has lived in the shadow of nuclear destruction. The events beginning with Cook led to the disappearance of paradise; it may never be regained.—WILLIAM C BOAKE (physician, Madison, Wisconsin).

WORDS CAPILLARY. Originally an adjective—for instance, capillary tube, vessel—now commonly used as a noun; having a very small, hair-like internal diameter and so describing a tube or one of the very slender blood vessels connecting arterioles and venules. Capillary, hair-like, is from *L capillus*, a hair; not any hair, but a hair of the head; *L caput*, head + *pilus*, hair. Robert Hooper's *Lexicon Medicum* (1839) describes ten different names for hair according to its location. It is not clear why scalp hair should have been the exemplar for capillary blood vessels.