Medico-Chirurgical Transactions

A Cardiovascular Cluster

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SUMMARY

A cluster of papers, important to the history of cardiology and cardiovascular surgery, that were published in volume 1 of Medico-Chirurgical Transactions (1809), are discussed. These include articles by Sir Astley Cooper on ligation of the common carotid artery for aneurysm, John Abernethy on mitral stenosis, and Sir David Dundas on acute rheumatic carditis.

Additional Indexing Words:

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Prior to the advent of the medical journal, new discoveries were published in book form as an essay or treatise or were privately circulated as letters. In England the Philosophical Transactions of the Royal Society, which first appeared in 1664/1665, served as a vehicle for the dissemination of new information and was frequently used by the physicians of that era. It was not until the close of the 18th century, however, that general medical periodical literature began to appear in England. Many of the early journals were published by medical societies organized, in part, for this purpose, and occasionally a journal will contain more than one medical classic. This essay deals with a cluster of papers, important to the history of cardiology and cardiovascular surgery, that were published by the Medical and Chirurgical Society of London in 1809.

The Medical and Chirurgical Society of London (Fig. 1)

The Medical Society of London, the oldest existing medical society in that city, was founded by John Coakley Lettsom in 1773. Dr. James Sims, who was president of the Medical Society of London from 1786 to 1808, irritated certain members of the society by his personality and by the manner in which he ruled the society. In 1805, a number of the members “finding the presidency of Dr. Sims intolerably irksome” broke away from the Medical Society of London and, on Wednesday, May 22, 1805, founded the Medical and Chirurgical Society of London. John Abernethy, Matthew Baillie, Gilbert Blane, Astley Cooper, William Saunders, Alexander Marcket, and John Yelloly were prominent among the founders.

The preface to volume 1 of the Transactions, written in part by Dr. Baillie, outlined the aims and principles of the society.

The want of a Society, founded upon liberal and independent principles, and conducted with the propriety and dignity which are worthy of the medical profession, had been long acknowledged: and a few physicians and surgeons in the year 1805, held a meeting for the purpose of considering the best means by which it might be obviated. . . .

The papers which come before the Society have necessarily various degrees of value. . . . Brilliant discoveries in medicine and surgery, or the branches connected with them, are seldom made; but the observing practitioner has various opportunities of improving the profession, by

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attention to the facts which come daily within his view, and by the management of materials which are already in his possession....

The reading of such communications as are presented to the Society, forms one part of its ordinary business. The interchange of practical knowledge, in the way of easy conversation, is the other.

Although brilliant discoveries are infrequent, a large number of medical classics found their way into the Transactions. Hodgkin on Hodgkin's disease, Curling on stress ulcer, Still on the acute onset of juvenile rheumatoid arthritis, and Paget on Paget's disease of bone are a few of the 58 classic articles listed in the Garrison and Morton Medical Bibliography that were published in Medico-Chirurgical Transactions.

"A Case of Aneurism of the Carotid Artery"
By Astley Cooper, Esq. F.R.S.
(Read Jan. 29, 1806)³ (Fig. 2)

Sir Astley Paston Cooper (1768-1841) was the pupil of John Hunter and, according to Garrison, was the most popular surgeon in London during the first quarter of the 19th century.⁴ He was a pioneer vascular surgeon and in addition to ligation of the carotid artery, ligated the external iliac artery and abdominal aorta for aneurysm. Cooper also

Mary Edwards, aged 44, was brought to my house by Mr. Robert Pugh, of Gracechurch-street, that I might examine a tumor in the neck, which was obviously an Aneurism of the right Carotid Artery. I advised her to become a patient in Guy's Hospital, and she was admitted on the 23d of October, 1805. The account she gave of the disease was, that the tumor appeared five months before, situated rather above the middle of the neck; its size at first being only that of the end of the finger; that it beat with very great force, and occasioned a strong pulsation in the brain; that it gradually increased upwards, until it reached the lower jaw, and extended downwards below the middle of the neck; that for

Figure 1
Title page of volume 1 of the Transactions.

Figure 2
Title page of Cooper on carotid artery aneurysm.
performed numerous experimental artery and nerve ligations in dogs.\textsuperscript{4}

On the 23rd of October, 1805, he admitted Mary Edwards, age 44, to Guy's Hospital with an enlarging aneurysm of the right common carotid artery. At first her husband objected to the operation, but her symptoms continued to increase and on Friday, November 1, 1805, Cooper operated.

The tumor at this time reached from near the chin beyond the angle of the jaw, and extended downward to within 2½ inches of the clavicle. I made an incision two inches long, on the inner edge of the sterno-mastoid muscle, from the lower part of the tumor to the clavicle, which laid bare the omo- and sterno-hyoid muscles, which being drawn aside towards the trachea, exposed the jugular vein. The motion of this vein produced the only difficulty in the operation, as under the different states of breathing it sometimes presented itself to the knife, tense, and distended, and then as suddenly collapsed. Passing my finger into the wound to confine that vein, I made an incision upon the carotid artery, and having laid it bare, I separated it from the par vagum, and introduced a curved aneurismal needle under it, taking care to exclude the recurrent nerve on the one hand, and the par vagum on the other. The two threads were then tied about half an inch asunder, being the greatest distance to which they could be separated. . . . As soon as the threads were tied, all pulsation in the tumor ceased, and the operation being concluded, and the wound superficially dressed, she rose from the chair in which she sat during the operation, and was immediately seized with a fit of coughing, which I thought would have terminated her existence. This seemed to arise from an accumulation of mucus in the trachea, which she could not expel; it continued about half an hour when she became more tranquil.

The patient died 3 weeks after surgery of infection after having experienced repeated paroxysms of cough, difficulty in swallowing, and transient paralysis of the left arm and leg. At autopsy,

The aneurismal sac was found inflamed, and around the clot of blood which it contained, there was a considerable quantity of pus.

The inflammation extended on the

\textbf{Figure 3}

Cooper's plate showing the carotid artery aneurysmal sac sitting upon the larynx (B) and trachea (A). The jugular vein (D), innominate artery (G), and right subclavian artery (H) are also seen.

outside of the sac along the par vagum, nearly to the basis of the skull. . . .

The sudden increase which the parts had undergone from inflammation, added to the size of the tumor previous to the operation, had occasioned so much pressure upon the pharynx, that it would not easily admit a bougie of the size of a goose quill.

In spite of the patient's death, Cooper concluded that the carotid artery may be as safely tied as any other artery in the body. The case report was illustrated with two plates (fig. 3).

In 1809, Cooper presented a second case of carotid aneurysm ligation to the Society, this case ending successfully.\textsuperscript{5} He felt that in theory, the operation should succeed, citing Dr. Matthew Baillie's case in which one carotid artery had been entirely obstructed
and the diameter of the other considerably lessened without any apparent ill effect. Prior to operating on humans, Cooper made the experiment of tying both carotids in the dog.

... and immediately as it was concluded the animal was placed upon the ground and shewed no diminution of voluntary powers. It exhibited the same fears and affections as before, and betrayed no greater loss of appetite, or disposition to sleep than an animal usually does who has been the subject of an experiment which gives some pain, but does not injure the vital functions.

He preserved and injected the principal vessels in this dog and felt that the two thyroidal arteries and two branches from each vertebral artery maintained adequate circulation.

The second patient was a 50-year-old porter, who presented with a pulsating mass about the size of a walnut in the left side of the neck just under the angle of the jaw. He was operated upon in 1808 and died in 1821, and an account of the postmortem findings can be found in volume 1 of *Guy's Hospital Reports.*

"On a Diminution (In Consequence of Disease) of the Area of the Aperture, By Which the Left Auricle of the Heart Communicates with the Ventricle of the Same Side."

By John Abernethy, Esq., F.R.S. (Read December 10, 1806)

John Abernethy (1764-1831) was also a pupil of John Hunter as well as a pioneer vascular surgeon. He was the first to ligate the external iliac artery for aneurysm and performed this operation four times, twice with success. He also ligated the common carotid artery for hemorrhage and in 1809 published *Surgical Observations on the Constitutional Origin and Treatment of Local Diseases; and on Aneurysms.* Abernethy, who was perhaps the most interesting and lucid lecturer of his age, referred to this as "my book."

Mitral stenosis had been described by Raymond Vieussens in 1705 and by Giovanni Battista Morgagni in 1761. Morgagni's *De sedibus* was translated into English in 1769, but Abernethy was evidently not aware of Morgagni's case as he wrote,

I do not find it [mitral stenosis] adverted to in any books treating on that subject [morbid anatomy]. Such an impediment to the easy and natural transmission of blood from one cavity of the heart to the other, has occurred to me in the course of my dissections, not unfrequently, and in various degrees. The contraction has, in some instances, been so slight, that it would have escaped my observation; had I not by remarks on former cases, been prepared to expect it; whilst in other instances, the

Figure 4

Title page of Abernethy on mitral stenosis.
auricle into the ventricle. In such cases, there existed a great mechanical impediment to the circulation of the blood, producing considerable enlargement of the left auricle and a proportionate diminution in the capacity of the left ventricle.

Abernethy's report of two cases is, however, the first description of mitral stenosis by an English author.

The patient was a young man of 19 who was admitted to St. Bartholomew's Hospital with a 3-year progressive history of generalized edema, ascites, and a livid color. The veins were slightly turgid, the breathing frequent and laborious, and the pulse small and rapid. Abernethy was able to make the diagnosis of an impediment of blood flow through the mitral valve anti-mortem.

In endeavoring to form an opinion on that subject, the smallness of the pulse led me to believe, that the left ventricle of the heart received and projected into the arteries an unusually small quantity of blood.

Notwithstanding the respiration was laborious and frequent, it still appeared too free to admit of the supposition, that the left cavities of the heart received the blood in such small portions, in consequence of an impediment to its transmission through the lungs. I therefore conjectured, that a mechanical impediment prevented the left ventricle from receiving its due quantity from the auricle, and I could suggest no other kind of impediment, but some polypous growth or unnatural tumor.

The patient died in congestive heart failure and at postmortem examination,

The left auricle was . . . filled with blood, and appeared of twice its natural magnitude. The left ventricle was small and empty. On laying open the left auricle, and removing the blood, . . . I was surprised to find the passage into the ventricle almost closed, apparently by the elevation of the mitral valves, nor could I pass even my little finger from one cavity into the other. On opening the ventricle to examine the communicating aperture more correctly, it was found to be of an elliptical form, and situated between the sides of the two pointed productions of the mitral valve. Its dimensions were not greater than would admit of the passage of a moderate sized bougie when compressed and adapted to the form of the aperture . . . .

The mitral valve appeared to be a little whiter, and more opaque, than natural, but not in any degree so much as we frequently meet with it, when no such contraction is produced.

The mitral valve of the second case, a 38-year-old woman, was "much thickened, opaque, and of the hardness of cartilage."

Abernethy failed to note an association between acute arthritis and valvular disease of the heart and thus could not have known that acute rheumatic carditis, described by David Dundas in the paper following Abernethy's, was of etiologic significance.

"An Account of a Peculiar Disease of the Heart"

By David Dundas, Esq.
(Read Nov. 26, 1808)"^1^2

David Dundas, Serjeant Surgeon to the King, finished this paper on November 20, 1806, and it was read in 1806 rather than 1808. He described nine cases of carditis and congestive heart failure, all of which were associated with one or more attacks of rheumatic fever.

In one case the affection of the heart appeared at the commencement of the rheumatic fever, and its action was so rapid, that the pulse could not be counted for many days. . . . The inflammation, pain, and swelling of the extremities, after having shifted from one joint to another for many weeks, subsided; but the affection of the heart continued, generally attended with great pain, producing in the progress of the disease, and towards its close, a considerable disposition to dropsy, under which the patient lingered for ten months.

The patients were all young, only two being older than 22 years. Six of the seven who died had postmortem examinations, and in all the heart was enlarged. In one case there was pericardial fluid and in all of the others adhesive pericarditis. There was dilatation but not hypertrophy of the left ventricle in all cases and "the heart was found of an unusually pale colour and very soft and tender in its texture."

Matthew Baillie (1761-1823), second president of the Society and perhaps the greatest
AN ACCOUNT

of a

PECULIAR DISEASE OF THE HEART.

BY DAVID DUNDAS, ESQ.

SERJEANT SURGEON TO HM MAJESTY.

Read Nov. 26, 1808.

THERE is a disease of the heart, which I apprehend is not very uncommon, no less than nine cases of it having, in the course of thirty-six years, fallen under my care. I have also heard of several other cases, and yet I do not believe any account of it is to be found in any medical author.

The patient complains of great anxiety and oppression at the precordia; has generally a short cough, and a difficulty of breathing, which is so much increased by motion or by any exertion, as to occasion an apprehension that a very little additional

Figure 5

Title page of Dundas on acute rheumatic carditis.

name in the list of physicians who have filled that chair, described the postmortem findings in one of the patients.

The pericardium was found closely adhering in every part to the surface of the heart. The heart itself had increased wonderfully in size; it was at least three times the size of a healthy heart. The muscular structure was, however, not increased in thickness beyond what it commonly is, so that its powers of action were not augmented proportionally to its bulk. As the quantity of blood in this heart was much larger than is natural, its powers of propelling this blood to the different parts of the body must have been much diminished below the common standard.

Dundas concluded by stressing that this disease “is always the consequence of, or is connected with, rheumatic affection,” and pointed out “the necessity of attending to the translation of rheumatism to the chest.” Dundas, like Abernethy, did not note an association between acute rheumatic fever with carditis and valvular disease of the heart.

It is often difficult to assign priorities of discovery. Dundas observed his first case in 1770 and over the ensuing 36 years collected eight more cases. He had “also heard of several other cases, and yet I do not believe any account of it is to be found in any medical author.” About the year 1788, Dr. David Pitcairn seems to have been the first to draw attention to the association of rheumatism with organic disease of the heart. Matthews Baillie reported Dr. Pitcairn’s observations in the second edition of his work on morbid anatomy, which was published in 1797. William Charles Wells’ paper “On Rheumatism of the Heart” was published in 1812 and is reprinted in Cardiac Classics by Willis and Keys. Wells, writing after Dundas, suggested that Mr. Dundas was not quite honest when he implied that he had never come across Dr. Pitcairn’s observations respecting rheumatism of the heart. Wells felt that Dundas had read Baillie’s book. As Dundas quoted Baillie’s autopsy description, perhaps Wells was a bit harsh with the Serjeant Surgeon.

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100 Years Ago
Acme of Pathos (Hugo)

All that was in him of generosity, of enthusiasm, of eloquence, of heart, of soul, of fury, of anger, of love, of inexpressible grief, ended in—a burst of laughter! And he proved, as he had told the Lords, that this was not the exception, but that it was the normal, ordinary, universal, unlimited, sovereign fact, so amalgamated with the routine of life that they took no account of it. The hungry pauper laughs, the beggar laughs, the felon laughs, the prostitute laughs, the orphan laughs to gain his bread; the slave laughs, the soldier laughs, the people laugh. Society is so constituted that sin and want and each and every catastrophe, fever, ulcer, and pang, is resolved on the surface of the abyss into one frightful grin of joy. Now, he was the prototype of that universal grin; that grin was himself. The law of Heaven, the unknown power which governs, had willed that a spectre, visible and palpable, a spectre of flesh and bone, should be the synopsis of the monstrous parody which we call the world; and he was that spectre.


.... in all time, travesty has been the argument of oppression....
