Cerebrovascular diseases in Africans *

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It is the belief of many doctors working in Africa that circulatory disorders in the atherosclerotic sense are not as common as in Europe. I have that same opinion for several reasons. In the first place we rarely see arteriosclerosis at post mortem examination and when we do so at our neuropathology sessions everyone crowds around to see the specimen. It is our impression however that when a vessel is affected by arteriosclerosis, and it is the basilar artery whose branches seem primarily involved, the involvement is of a very severe kind. Secondly I have never once explored the carotid bifurcation of an African patient for stroke and yet it is not an uncommon operation in Europe. This is not because our physicians are unaware of the condition of localised atherosclerosis, the majority of younger patients suffering an apparent cerebral thrombosis are subjected to arteriography, but none to date have required a cleaning out of the carotid bifurcation or of other accessible portions of the carotico-vertebral system. Finally, ruptured cerebral aneurysm and sub-arachnoid haemorrhage are less commonly seen than the size of the population would lead one to expect. It is of course therefore only an impression but I believe that age for age the arteriosclerotic rate is lower in Africans than it is in Europeans.

During the year 1st January to 31st December, 1967 there were 15,375 admissions to the Harare Hospital, Salisbury (not including the maternity division). Approximately 3,058 of these were children so that there were 12,317 adults admitted from a population of approximately half a million people.

TABLE 1. Numbers of admissions to Harare Hospital of patients suffering from cerebrovascular or related diseases (by primary diagnosis) (year 1967).

	Male	Average age	Female	Average age
Cerebral Haemorrhage	29	52 yrs	15	48 yrs
Cerebral Thrombosis	16	46 yrs	21	43 yrs
Sub-arachnoid Haemorrhage (without demonstrable aneurysmal findings)	12	52 yrs	6	33 yrs
Ruptured Cerebral Aneurysm	3	49 yrs	—	—
Middle Cerebral Artery Thrombosis	2	52 yrs	1	28 yrs
Hypertensive Encephalopathy	2	67 yrs	4	24 yrs
Essential Hypertension	80	50.5 yrs	61	44 yrs
Malignant Hypertension	9	30 yrs	5	36 yrs
Renal Hypertension (due to pyelonephritis)	7	44 yrs	4	25 yrs
Coronary Thrombosis	—	—	—	—

DISCUSSION

The most common type of cerebrovascular disease that is normally seen in medical practice is that disorder which we call "stroke". This may comprise a cerebral haemorrhage or a cerebral infarction and of course they are very strongly related to hypertension. We see there were only 172 hypertensive patients and though I do not have any comparable figures at the present time for similar English general hospitals this does seem to me to be low figure and probably the incidence and average age is lower than that of hospitals elsewhere because of the reduced expectation of life. Cerebral haemorrhage had 44 admissions and its frequently indistinguishable partner, cerebral thrombosis, had 37. The average ages of both haemorrhage and infarction were similar. Although males outnumber females amongst the cerebral haemorrhages by almost double, the females outnumber the males amongst the thrombotic group and probably sexwise the incidence of the two combined are equal. As far as age is concerned women seem to be affected a few years younger than men in both groups and a total of eighty-one cases seems to be a small number.

There are some interesting observations to make about sub-arachnoid haemorrhage. In most British hospitals approximately half the patients suffering from spontaneous sub-arachnoid haemorrhage who survive the initial bleed can be shown by arteriography to have an aneurysm. Twenty-one patients suffered a sub-arachnoid haemorrhage but only three of them are definitely known to have had an aneurysm although 14 of them died (15%). At the present time Dr. I. Rachman and I are engaged in a more intensive survey of sub-arachnoid haemorrhage in the Mpilo Hospital, Bulawayo and some of the results have been worked out. During the years extending from 1st January, 1962 to the 3rd June, 1967 (that is $5\frac{1}{2}$ years), 46,064 males and 34,137 females were admitted to that hospital. Of these, only 78 patients were seen with a spontaneous sub-arachnoid haemorrhage confirmed by lumbar puncture and in my opinion it is very unlikely that many have been missed. Fifty-four of these were males making an incidence of 1.18 per thousand male patients and 24 were females (0.7 per thousand female patients). There was thus an annual incidence of 14 patients in a hospital of 672 beds. This compares with the European population of Rhodesia and surrounding areas which approximates to 300,000 and from whom the author alone has seen 143 cases over the course of ten years. Thirty males and 13 females died. All were subjected to post mortem examination. Twenty of these died from massive intracerebral haemorrhage with a rupture into the lateral ventricles resulting from hypertension and renal disease, and therefore

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these are not true sub-arachnoid haemorrhages, but are intracerebral haemorrhages which have ruptured into the ventricle and kidney disease was the primary cause of the hypertension here. A further 7 died as a result of atheroma and hypertension (so some arteriosclerosis is present) and in these cases the bleeding point usually could not be identified. Ten patients died from rupture of a cerebral aneurysm, 1 from cerebral infarction, 1 from thrombocytopenia, 1 from cerebral metastasis and in 3 cases no cause or source of haemorrhage could be found. The average age of the males dying from cerebral haemorrhage, that is the rupture of blood through the brain substance to the ventricles, was 39 years while the average of females dying from this cause was 49 years. I doubt if this means anything more than the difficulty we encounter in the estimation of a patient's age. By contrast the average age of females dying from an aneurysm was 25 years. Thirty-five patients (24 males and 11 females) survived. All of these were subjected to intensive investigation and hypertension was believed to be the major cause in 15 with 6 aneurysms, 2 angiomas and no cause being found in 12. Therefore 8 of 35 who survived showed a vascular abnormality, and out of all 78 patients 15 had a cerebral aneurysm and 2 had an angioma. This is a low percentage by English standards. At the London Hospital between the years 1948 and 1955, 164 arteriograms were preformed for proven sub-arachnoid haemorrhage (that is on patients who survived the haemorrhage). (Levy 1960). Thirty-nine percent of these had an aneurysm and 14% an angioma. Forty-six percent had no demonstrable vascula abnormality. By contrast only 24% of the Mpilo patients who survived showed a vascular abnormality.

Middle cerebral artery thrombosis is an interesting condition which we see regularly both in young people and the elderly and in both sexes. During the year 1967 three cases were seen, two male and one female. The female was not taking contraceptive pills. Regularly there is a steady incidence of this condition and I have the impression that it is more common and possibly has a different pathology than is seen elsewhere. I have however not had the opportunity to examine one of these patients at post mortem because they rarely die and up to date I have not explored one surgically though clearly operations will have to be undertaken on this region and in this condition before long. Hypertensive encephalopathy claimed 6 cases, 2 male of an average of 67 years and 4 female of an average of 24 years. What this means, if it means anything other than the difficulty in estimating age, I do not know.

Therefore we can see that in a hospital with an annual admission rate of 15,000 from a population of getting on for half a million only 276 cases had been admitted with any relevance to cerebro-vascular disorder and 141 of these were for hypertension only. This seems to me to be rather a low figure.

I have deliberately omitted any reference to syphilitic arteritis. This is not because I believe it does not exist, but because I did not see the diagnosis anywhere. Syphilis is not an uncommon disease but I did not see it recorded as a cause of hypertension or other cerebro-vascular condition in any patient.

Another way in which we can examine this problem is by reviewing the certified causes of death as they are recorded by the Registrar of Births and Deaths in Salisbury. If the European population is taken as reasonably typical from a health standpoint of white groups in the Northern hemisphere these can be used as a standard against which the incidence of disease in the African Group can be compared.

The population of "Greater Salisbury" in 1967 contained 260,000 Africans and 91,000 Europeans. In that year 13 Africans died from "Vascular lesions affecting the Central Nervous System", an incidence of 0.05 per 1,000 of the population while 36 Europeans died, an incidence of 0.4 per 1,000.

It is my opinion therefore that cerebro-vascular disease is considerably less common in Africans than it is in Europeans and this belief is reinforced by the fact that it is clear that vascular disease of all sorts is less common. In the last ten years at the Harare Hospital there have been at most a dozen peripheral vascular operations for conditions related to arteriosclerosis (apart from diabetes) while in 1967 no case of coronary thrombosis was admitted to the Harare Hospital.

REFERENCES

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