DROP ATTACKS IN THE ELDERLY

A Request for Information

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The major occupational risk of growing old, particularly in the case of a woman, is probably the liability to tumble and injure herself. This is now presenting the community with a very serious problem which is due mainly to the increase in the numbers of the very old—the over seventy-fives, for it is particularly in these late ages that accidents are so liable to be associated with fractures based on senile osteoporosis.

To understand what happens when an old person tumbles, a full account of the details of the incident is as necessary as in the case of a motor-car accident; and an enquiry directed along these lines—with confirmation where possible from relatives—showed that approximately one-quarter of the attacks occurred as sudden, unexpected, and apparently unprovoked incidents, arising without any apparent contribution from the environment[1]. It is these which are described as " drop attacks ". Characteristically, an old person might be standing up, or might be walking, or performing some normal occupation—and without warning or loss of consciousness suddenly fall to the ground. In these attacks the old people are quite certain that they had neither slipped nor tripped, but that they just " went down ". The typical pattern of an attack is shown by a woman of 68 who was crossing the street, and without slipping or tripping " suddenly went down on the floor " scattering her shopping in all directions, and nearly getting run over. She made an almost immediate recovery, and after being helped on her feet was able to walk off afterwards. Recovery in these attacks is, however, by no means always as rapid as this, and the fall can be followed by a long period of inability to rise. In one case a woman of 80 fell on the kitchen floor at 9.30 a.m., and was unable to get up until a neighbour came in at 5.30 p.m. and helped her up, so that there was eight hours loss of power. The loss of power is probably associated with a loss of muscle tone—a state of flaccidity—for the relatives always complain bitterly of their difficulty in getting the old people up again—saying they are " a dead weight ". The distribution of the loss of power in these cases is interesting, though much fuller

information is needed. The knowledge at present available strongly suggests that the loss of power is limited to the anti-gravity muscles of the back and legs; for these people cannot use their legs for getting up, and if they fall on their back they cannot turn over. They can, however, use their arms, because they are able at times to drag themselves across the carpet and then clamber up a convenient piece of furniture, such as a chair or a bed-post, where they wait until recovery occurs. In two cases that I have seen, the details of the recovery process suggested that the onset of recovery might be related to pressure on the soles of the feet—thus, in one case a woman fell on her bedroom floor when going to bed, and neither her husband nor her doctor could get her up until the doctor happened to get her feet against the skirting board, when he was able " to lift her up from the back "—which suggests that pressure on the soles of the feet against the skirting board may have initiated the recovery of tone in the muscles. There is a physiological basis for this hypothesis, in what is known as the " positive supporting reaction ". In decerebrate animals that have also had the cerebellum removed, the limb and back muscles lose their tone—but this is restored by pressure on the soles of the feet.

These attacks are of the greatest interest and importance, and we need to know a lot more about them. This information can best be provided by general practitioners, for they alone are likely to see the victims in the course of an attack, or to have old people under their care who are known to be liable to these drop attacks. These patients are but rarely referred to hospital unless they have injured themselves, and in that case it is the injury for which they are referred rather than the attack itself. I shall therefore be very grateful indeed for any information that can be given me by practitioners who see or have an opportunity of studying them. I am particularly interested in the following aspects of the condition:—

1. State of health on that particular day—whether they were feeling quite normal or whether they were " off colour ".

2. The nature of the movement or activity—if any—at the time of the drop.

3. Whether there is any evidence that they might have been moving their head in a particular position—particularly whether they may have been extending the neck and looking upwards. (This is of much interest, for about half the individuals I have seen are unable to look upwards or to work with their hands above their head without discomfort. Though extension of the neck may be an important factor, its relevance to a particular incident may not always be immediately obvious—thus the matron of a

hostel for old people told me that she was starting to put some drops in an old lady's eye when the latter suddenly slithered out of the chair to the ground. It is at any rate possible that the origin of this fall may have lain in the fact that the old lady would have had to " put her head back " in order that the matron could get the drops in the eye!).

4. If the patient is seen during an attack a careful neurological examination could be of great value. One would like to know:—

(A) the state of the muscles concerned—whether the loss of power is a flaccid one or not. Its distribution—whether it affects (*a*) all muscles in the legs, or only certain groups of muscles, (*b*) the muscles of the back, (*c*) the muscles of the arms, (*d*) the muscles of the neck—*i.e.* can they support their head or not.

(B) The state of the reflexes. One practitioner told me that in a case he saw the muscles were in a state of flaccidity but the reflexes were retained. This is consistent with an explanation involving the temporary loss of function of the cerebellum. This may be important, because no one really knows the basis of these attacks, and evidence helping to localize the lesion would be of great value. The suggestion has been made[2] that they may be based on a temporary disturbance in the blood supply to the hind-brain, a temporary ischaemia of the medullary and cerebellar centres that are concerned with balance. This might arise in two ways, which are not necessarily mutually exclusive. On the one hand there might be a general circulatory defect such as could arise from an abnormality of blood pressure or cardiac function, and information is therefore sought on this point. On the other hand it is possible that the ischaemia might be more local in origin—based on obstruction to the flow of blood in the vertebral and basilar arteries. This could be caused either by atheroma or by kinking of the vertebral arteries as the result of cervical osteo-arthritis, triggered off by an appropriate movement of the head—usually extension of the neck. Information on this point (see 3 above) would therefore be very valuable.

I shall therefore be extremely grateful to any doctor who is able to give me further information as to what actually happens in these attacks.

REFERENCES

1 Sheldon, J. H., *Brit. med. J.*, 1960, **2**, 1685.
2 Kremer, M., *Brit. med. J.*, 1958, **2**, 121.