

Approach to positioning aged people during dental hygiene care.

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Each dental hygienist acquires a unique body of information about how best to meet the needs of aged clients. This is gained through personal observation, trial and error, assessment of treatment outcomes, and discussion with these clients and with other professionals. Little has been published, however, on the subject of how to position aged clients in a conventional dental chair, or about kyphosis and its relevance to dental hygiene practice.

In most countries, the proportion of aged people in the population is increasing, and population aging has become an issue for the 21st century. This was the subject of the opening address in November to the International symposium on Dental Hygiene in Tokyo. Dr. Ogawa of the Population Research Institute is to quickly collect information upon which to base treatment decisions for these clients.

To make appropriate treatment decisions, it is necessary to know geriatric anatomy, not only because of our interest in the subject but to be able to differentiate that which is a normal part of aging from that which is disease.

Normal changes in the aged such as atrophy of sweat glands and loss of hair may be confused with hypothyroidism. Reduction in the rosy colour of the face, a common aged change, may erroneously indicate anaemia. Loss of subcutaneous fat and atrophic changes in the skin can cause confusion during assessment if more of the internal structures of the neck become palpable.

Of particular interest to the dental hygienist is the anatomy of the face and neck and those aged changes associated with the oral structures. The following discussion focuses mainly on the neck and provides an innovative clinical technique and rationale for positioning aged clients in the dental chair so that their well-being is not adversely affected.

CHANGES ASSOCIATED WITH THE SPINE:

With increasing age degenerative changes occur and the spine gradually loses its mobility. These changes are seen radiographically as degeneration of the discs and joints in almost all elderly people. Osteoporosis can be identified by radiographs in most members of this age group.

In these cases, sustained rotation of the neck may result in occlusion of the vertebral artery space.

In the elderly, spinal pathological bony overgrowth formation (osteophyte) may be so gross as to cause the spine to become rigid. Degenerative changes in the cervical spine are a common cause of spinal cord compression.

With advancing aged the severity of osteophytosis increases and complete bridging of spaces between the vertebrae may occur.

CHANGES ON THE BLOOD SUPPLY:

Arteriosclerosis involving the carotid artery and vertebral systems is common and is reported to produce dizziness in the aged client. If some arterial disease is present and combined with cervical spondylosis, extension and full rotation of the head interfere with the vertebral artery blood flow.

Transient cerebral ischemia attacks (TCIA'S) are circulatory/neurological disturbances usually affecting elderly people. The cause is commonly some occlusion of the cerebrovascular system. The client may experience a variety of symptoms from loss of vision in one eye to some loss of feeling on one side (hemiparesis). These attacks are often due to atheroma and occlusion of the vessels of the neck associated with stenosis, hypotension, or matter being carried to arteries in the head slowing or partially blocking blood flow to the brain. This is a transient condition lasting minutes or hours followed by a complete return to normal.

If this condition is present in elderly dental clients it is vital that procedures carried out by dental hygienists not further occlude these vessels and cause symptoms of vertigo, nausea and falling forward onto the knees or face. Such episodes cause extreme worry to elderly persons so that they lose confidence. If the attacks are associated with dental visits, the client may refuse recalls.

In aged people the aorta lengthens elevating the aortic arch. This can produce a pulsating swelling that is palpable and occasionally visible on the right side of the neck.

Changes to the left side of the neck include compression of the left innominate vein by the enlarged rigid aorta leading to dilation of the left internal jugular vein. This is most easily seen with the client sitting at a 45-degree angle.

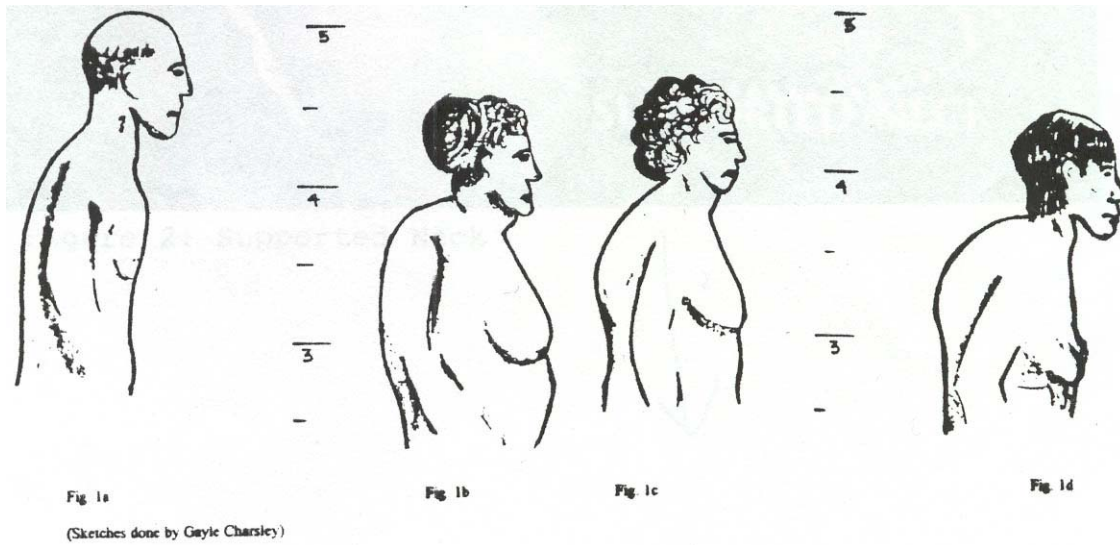
CHANGES IN POSTURE:

Figure 1 indicated some postural changes associated with aging. Little change is evident in fig 1a, but in the Figs 1 b,c, and d, rounding of the spine is clearly identified. Notice the difference in the spinal change from client to client. Figure 1d (on the extreme right) is a client of 94 years. It is evident that attempting to place the back of the head in line with the thoracic spine on a flat dental chair would be problematic for this client.

Anterior movement of the head in relation to the shoulders and spine occurs during aging. It is important for the resulting kyphosis to be supported in the dental chair to prevent occlusion of the airway or arteries, and to avoid hyperextension of the neck. Hyperextension of the neck causes the airway to be opened and problems of aspiration may result. To compensate for the kyphosis of the upper thoracic spine there may be a backward tipping of the head. The thyroid gland may then descend in relation to the clavicles. This becomes important when palpation of the thyroid is to be done.

KEY ISSUES FOR POSITIONING AGED PEOPLE DURING DENTAL HYGIENE CARE:

Assess the posture



Determine if the client needs to have neck support provided to keep the blood supply from being reduced, the neck from hyperextension, or to provide comfort.

Provide support for the neck

Use an inflatable bath pillow, fill the kyphotic space between the dental chair and the neck, as shown in figure 2. This pillow can be inflated in varying amounts of specific to each client's needs. The head is held comfortably in this position throughout the procedure.

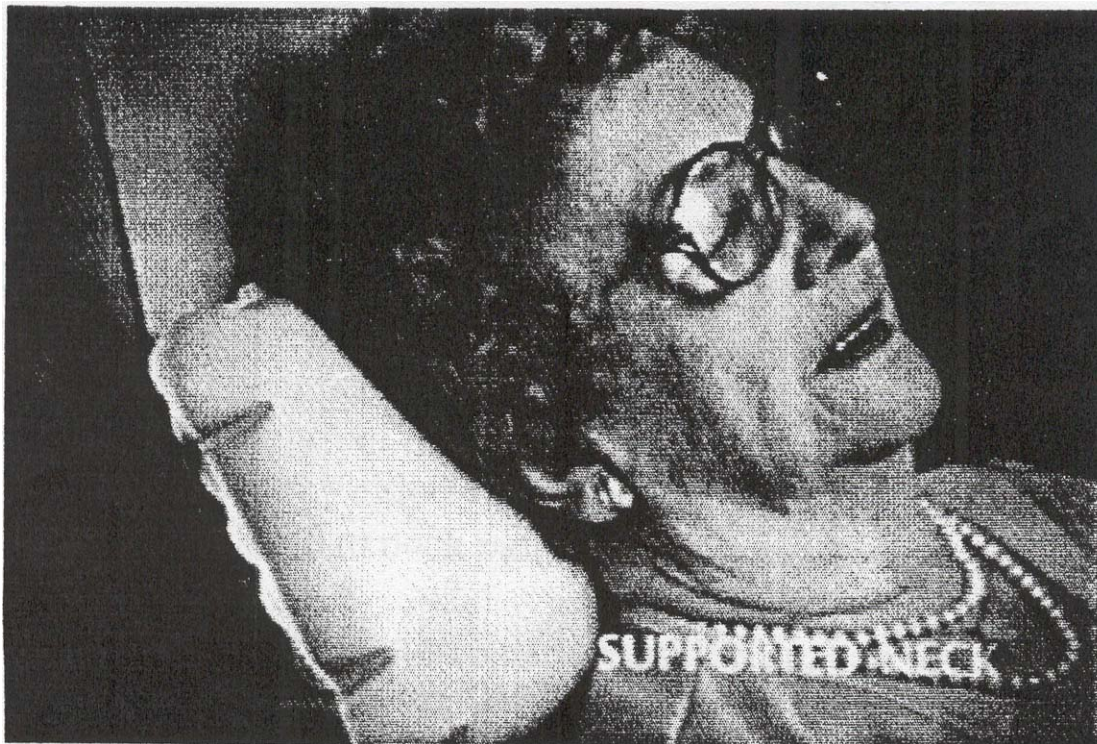


Figure 2: Supported Neck

Palpate the neck one side at a time

Palpation of the nodes and other structures of the neck can put pressure on vessels that already have some occlusion. Be aware that the external carotid artery may be anterior to its normal position and do not apply pressure to both sides at once. This could reduce blood flow sufficiently to negatively affect the well being of the client.

Limit the head rotation to 45 degrees

To keep the blood supply and venous return from being reduced, do not over rotate the head. Stiff spines and arterial diseases are common with increasing age. Pain, vertigo, occlusion of vessels and notable discomforts are associated with over rotation of the head.

FURTHER CONSIDERATION FOR THE DENTAL HYGIENIST:

Pain is always of concern to those of us in the Dental Hygiene practice and can be produced by odd posture. Placement of the elderly client on a flat surface such as a dental chair for an extended length of time can be a factor in producing these pains. In the elderly client vertigo and headache are commonly related to neck pain.

Vertigo, unsteadiness and loss of equilibrium can occur upon changes of position. Older clients must therefore be cautioned to get up from the dental chair slowly. They should not sit for long periods of time following a physical illness, as diminished cerebral blood flow is common and could result in syncope.

It is important to keep clients from falling and from injury. A long wait in the reception area should be avoided.

Conclusions

Knowing the morphological and pathological trends associated with aging has an impact on how aged clients are managed in the dental environment. It is hoped that the information in the article will be used to determine some of the adaptations that are necessary to assure safety and avoid the negative outcomes of dental hygiene care.

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