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Key Words

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Contraindications to the Dix–Hallpike manoeuvre: a multidisciplinary review

Contraindicaciones de la maniobra de Dix–Hallpike: una revisión multidisciplinaria

Abstract

The Dix–Hallpike manoeuvre is widely used in the diagnosis of positional vertigo and is regarded as safe. The manoeuvre involves a degree of neck rotation and extension, and consequently one might expect there to be some patients, particularly those with neck problems, in whom the manoeuvre is contraindicated. The term 'neck problem', however, encompasses a whole range of conditions, including soft tissue disorders, cervical spondylosis, prolapsed intervertebral disk, and severe rheumatoid arthritis with cervical instability. These in turn will give rise to a variety of symptoms, which will vary from minimal pain or stiffness to severe pain or complete immobility, and, in some cases, neurological deficit. Clarification is therefore needed to establish the point at which any neck pain or stiffness ceases to be a minor problem and becomes a contraindication to performing the Dix–Hallpike manoeuvre. This paper clarifies this issue by discussing the issue of absolute contraindications and proposing a simple functional assessment of neck mobility which can be performed prior to performing the Dix–Hallpike manoeuvre. Relative contraindications such as back pathology, vertebrobasilar ischaemia (posterior circulation ischaemic disease), nerve root compression and medical fitness are also discussed.

Sumario

La maniobra de Dix–Hallpike es ampliamente utilizada en el diagnóstico del vértigo posicional y ha sido considerada como segura. La maniobra involucra un cierto grado de rotación y extensión del cuello, y consecuentemente uno podría esperar que existan algunos pacientes, particularmente aquellos con problemas en el cuello, para quienes dicha maniobra estaría contraindicada. El concepto de "problemas de cuello", sin embargo, comprende un amplio rango de condiciones, incluyendo trastornos de los tejidos blandos, espondilosis cervical, discos intervertebrales prolapsados, y artritis reumatoide severa con inestabilidad cervical. Estas condiciones dan lugar a una variedad de síntomas que van desde el dolor mínimo o la rigidez, hasta el dolor severo o la inmovilidad total, y en algunos casos, el déficit neurológico. Se requiere, por lo tanto, una aclaración para establecer el punto en el que cualquier rigidez o dolor cervical deja de ser un problema menor y se convierte en una contraindicación para realizar la maniobra de Dix–Hallpike. Este trabajo aclara el asunto discutiendo las contraindicaciones absolutas y proponiendo una evaluación funcional simple de la movilidad cervical, que puede realizarse antes de ejecutar la maniobra de Dix–Hallpike. Se discuten también las contraindicaciones relativas, tales como la patología de la espalda, la isquemia vertebrobasilar (enfermedad isquémica circulatoria posterior), la compresión de raíces nerviosas y la condición de salud.

Introduction

Benign paroxysmal positional vertigo (BPPV) was first described by Barany in 1921, although some authors ascribe this honour to Adler in 1897 (Lanska and Remler, 1997). Patients presenting with BPPV typically describe transient vertigo when rolling over in bed, looking upwards with neck extension and rotation, or bending over.

Various hypotheses have been proposed to explain this pathology, the two main ones being cupulolithiasis and canalithiasis.

The cupulolithiasis hypothesis proposes that debris (thought to be degenerate otoconia) in the posterior semicircular canal becomes attached to the cupula, thereby making it gravity sensitive (Schuknecht, 1969). Head movements in the plane of the posterior semicircular canal will therefore result in abnormal stimulation of the cupula and therefore nystagmus. The more recent theory of canalithiasis proposes that there are small particles which are free-floating in the endolymph (Hall et al, 1979). Many head movements in the plane of the posterior semicircular canal will therefore result in abnormal endolymph

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flow due to the hydrodynamic drag of the debris. The cupula will therefore be displaced abnormally, and neural firing will result. For a review of these hypotheses, and of treatment options for BPPV, the reader is referred to Beynon (1997).

The use of the Dix–Hallpike manoeuvre in the diagnosis of BPPV is well established (Shepard and Telian, 1996). The patient's head is rotated at an angle of 45°, in order to place the posterior semicircular canal in the plane of maximum stimulation. The patient is then quickly lowered from a sitting position into a lying position, in which the head hangs over the end of the couch, the neck necessarily undergoing some rotation and extension during the manoeuvre. In patients with neck pathology, these movements could be painful and possibly harmful, and in some cases contraindicated.

Failure to perform a Dix–Hallpike manoeuvre may have implications for patient management. It may not be possible to confirm the diagnosis of BPPV, even if a classical history is present. In addition, the simple and successful treatment of particle repositioning (Epley, 1992, 1995) would be inadvisable. These patients may even be judged ineligible for vestibular rehabilitation, and may therefore continue to experience motion-provoked dizziness, which may be extremely handicapping.

The question arose as to whether the performance of the Dix–Hallpike manoeuvre would be contraindicated in the presence of certain neck pathologies. A review of major textbooks on vestibular assessment and rehabilitation (Baloh and Honrubia, 1990; Jacobson et al, 1993; Herdman, 1994; Shepard and Telian, 1996), together with a Medline search (using keywords BPPV, Dix–Hallpike and contraindications from 1966 to 2000), failed to find any listing of contraindications to the Dix–Hallpike manoeuvre, although Herdman (1994) does mention that cervical and back pain may preclude the use of particle repositioning manoeuvres. In fact, in their original paper, Dix and Hallpike (1952) say that 'in a good many subjects, pain in the neck and occipital region is complained of'. When audiology departments in three other hospitals in East Anglia were asked about their policies, it became clear that this is an area requiring some clarification. All three centres had widely divergent views, including 'not sure', use of a modified technique, and reliance upon otolaryngologists for appropriate referrals. The aim of this paper is to clarify this issue.

Epidemiology of neck pain

Most people will experience some minor stiffness and pain in their neck during their lifetime. One study reported 43% of the working population in a semi-rural community experiencing neck symptoms in the previous 6 months (Ekberg et al, 1995). This incidence has been confirmed by other work (Linton, 1990; Makela et al, 1991). Other studies have reported a lower incidence, in that approximately 20% of the working population experienced neck pain during a 1-year period (1-year prevalence figure; Borenstein et al (1996)). The incidence of simple neck stiffness has been quoted as being 25–30% in working individuals between the ages of 25 and 29 years, and 50% for those over 45 years of age (Bland, 1994a). Females appear to be more prone to neck pain, as do people with psychological distress (Leclere et al, 1999; Mannien et al, 1997). The challenge for the clinician is deciding what disease or pathology constitutes a contraindication to the Dix–Hallpike manoeuvre.

Cervical spine pathology

The names of certain neck pathologies can, to the audiologist, conjure up a variety of ideas of the presentation of symptoms. The uninitiated may be overwhelmed by medical terminology; the mere mention of a cervical pathology alone may be considered by some a contraindication to the Dix–Hallpike manoeuvre. In view of the fact that 80% of men 50 years or older have cervical spondylosis (Ratkovits, 1994), the adoption of this degree of caution would mean that very few Dix–Hallpike manoeuvres would actually be performed.

The presence of degenerative changes in the cervical spine does not always mean that the patient is symptomatic. Magnetic resonance imaging (MRI) studies have identified the presence of major abnormalities in the cervical spine in 19% of 63 asymptomatic subjects (Boden et al, 1990). This is comparable with a 21% incidence of filling defects observed by Hittselberger and Witten (1968) in studies of cervical myelograms of asymptomatic subjects. Major abnormalities were detected in 14% of subjects under 40 years of age and 28% of those over 40 years of age. The prevalence of narrowing or degeneration of one or more disk spaces and of spondylosis was high and increased with age. The most frequently seen abnormalities in the asymptomatic group were herniated nucleus pulposus and foraminal stenosis (Boden et al, 1990).

In some cases, the severity of the neck/arm symptoms is the important parameter to consider. Mild cervical spondylosis, for instance, will affect the functional ability of the patient very little, but severe cervical spondylosis may be disabling and painful. Patients with prolapsed intervertebral disk can present with symptoms ranging from mild aching pain, with a minimal restriction in cervical movement, to severe nerve root pain, with accompanying numbness and paraesthesia with a marked restriction in the range of cervical movement. It is important to bear these factors in mind when assessing patients for suitability for the Dix–Hallpike manoeuvre, and not only take note of the pathology but also match it with clinical signs and symptoms.

There are, however, according to expert medical opinion, certain pathologies in the cervical spine that should be regarded as absolute contraindications to the Dix–Hallpike manoeuvre: atlantoaxial subluxation, occipitoatlantal instability, prolapsed intervertebral disk with radiculopathy, cervical myelopathy, previous cervical spine surgery, recent trauma to the cervical spine, severe rheumatoid arthritis, aplasia of the odontoid process, Arnold–Chiari malformation (cerebellar ectopia), and cervical artery dissection (A. M. Bronstein, personal communication; P. J. Martin, personal communication). Care must be taken with patients who have suffered recent trauma to the cervical spine, as the test may be contraindicated if the patient is without sufficient range of movement. Table 1 identifies the pathologies which should be regarded as contraindications to performance of the Dix–Hallpike manoeuvre, along with their symptom presentation. It is suggested that where a medical screen by a physician is not available prior to performing the Dix–Hallpike manoeuvre, this table be used by the non-medical clinician as a screening checklist for absolute contraindications.

In cases of atlantoaxial subluxation and occipitoatlantal instability, the application of the Dix–Hallpike manoeuvre could lead to compression of the medulla and brainstem and compromise its vascular supply (Conlon et al, 1966; Snelling et

Table 1. Symptom presentation of absolute contraindications to the Dix–Hallpike manoeuvre.

<i>Contraindications to Dix–Hallpike manoeuvre</i>	<i>Symptom presentation</i>
Cervical spine instability including atlantoaxial subluxation Occipitoatlantal instability (rheumatoid arthritis, Down's syndrome)	Neck pain, facial pain, headaches, paraesthesia in hands, feet, face or tongue. Unsteadiness in walking, head and neck feeling unstable. Dizziness and vertigo
Prolapsed intervertebral disk with radiculopathy	Severe neck pain with referred pain in arm, hand and fingers. Paraesthesia and numbness in the arm, hand and fingers down the line of nerve distribution. Restricted neck movements. Muscle weakness in arm and/or hand
Cervical myelopathy	Pain in neck and/or arms. Loss of power in arms, hands, legs. Unsteadiness on feet. Numbness or paraesthesia in hands and/or feet. Increased tone in limbs
Arnold–Chiari malformation (cerebellar ectopia)	Occipital headaches aggravated by coughing or sneezing, ataxic gait, progressing to spastic quadraparesis, severe bulbar problems and respiratory difficulties
Vascular dissection syndromes	Facial and neck pain, acute retro-orbital pain, Horner syndrome
Previous cervical spine surgery	Patient may be symptom-free or have residual neck and/or arm pain
Acute trauma to neck—'whiplash' Contraindicated if insufficient range of movement of the cervical spine.	Neck, arm, facial, trunk pain with restricted neck movement. Vertigo, dizziness/visual symptoms. Symptom severity will vary
Rheumatoid arthritis	Multiple joint involvement, especially feet/hands, knees/elbows. Neck pain and restricted movement. May have signs of cervical spine instability (see above)
Carotid sinus syncope	Fainting/blackouts on turning head or buttoning up shirt, or pressure on neck
Aplasia odontoid process	Neck pain, transient neurological symptoms, symptoms of cervical spine instability

al, 1990). Atlantoaxial instability may also result from trauma to the cervical spine (Vinchon et al, 1995). Patients with atlantoaxial dislocation often report dizziness and vertigo in relation to head movement or positional changes (Vinchon et al, 1995; Wenngren et al, 1998). Other pathology, albeit extremely rare, that predisposes to atlantoaxial instability is aplasia of the odontoid process (Phillips et al, 1998), in which the vertebral artery is stretched by the subluxation of the atlas and os odontoideum (Lyness and Simeone, 1978; Takakuwa et al, 1994; Sasaki et al, 2000).

Arnold–Chiari malformation is a congenital abnormality resulting in the herniation of the tonsils of the cerebellum and medulla oblongata through the foramen magnum into the vertebral canal. This results in a blockage of the exits to the cerebrospinal fluid in the roof of the fourth ventricle, leading to hydrocephalus. This malformation is commonly associated with craniovertebral anomalies, including cervical fusion (Klippel–Feil fusion of C2 and C3) or various forms of spinae bifida. Signs and symptoms are related to pressure on the cerebellum and medulla oblongata or associated syringomyelia (cavity or syrinx within the central spinal cord). Patients may present with downbeat nystagmus enhanced by lateral gaze or, in the case of syringomyelia, rotatory nystagmus (Baloh and Honrubia, 1990).

Both cervical radiculopathy and cervical myelopathy should be considered a contraindication to the Dix–Hallpike test. In cervical radiculopathy, symptoms include sharp stabbing pains in the neck or down the arm which may be superimposed on a general aching in the neck or shoulders, with numbness or paraesthesia along the line of a nerve root distribution (Lindsay et al, 1997). Cervical myelopathy can be a complication of severe cervical spondylosis or rheumatoid arthritis. Patients may present with radicular and/or lower motor neurone symptoms, as in cervical radiculopathy, at the level of the lesion, and/or upper motor neurone signs below the level of the lesion, including: difficulty in walking, increased tone, clonus, extensor plantar response and sphincter disturbances in the advanced stages. Application of the Dix–Hallpike manoeuvre to patients with prolapsed disk with radiculopathy or myelopathy may increase the patients' symptoms.

In some cases where patients have had neck surgery, grafts are used to stabilize the vertebral segment, which will reduce the movement, and in these cases it would not be appropriate to perform this manoeuvre. Vascular dissection syndromes are associated with blunt and penetrating trauma. Associated conditions include fibromuscular dysplasia, Marfans syndrome, Ehlers–Danlos type IV syndrome, atherosclerosis, and pharyngeal

infection. With cervical artery dissection, patients present with pain in the eye and face, and with vertebral artery dissection, pain in the occiput and neck. Other associated symptoms include Horner syndrome, audible bruits, pulsatile tinnitus, and sweating disturbances (Lindsay et al, 1997).

Another pathology that should be considered a contra-indication, albeit extremely rare, is aplasia of the odontoid process (Phillips et al, 1998), in which the vertebral artery is stretched by the subluxation of the atlas and os odontoideum (Lyness and Simeone, 1978; Takakuwa et al, 1994; Sasaki et al, 2000).

Patients sustaining whiplash injuries may experience symptoms for varying lengths of time. The symptoms can be located in the neck, face, upper trunk, arms, and hands. Patients may also experience dizziness and vertigo. However, BPPV may result from neck trauma, and it is important to assess the patient carefully. Many patients can be assessed and successfully treated for BPPV following whiplash provided they have a sufficient comfortable range of neck movement.

Although it is uncommon, the vertebral arteries may be damaged in head injury and cervical spine trauma, particularly where there is facet joint dislocation or transverse foramen fracture (Weller et al, 1999; Veras et al, 2000). Screening by MRI is recommended for selected patients (Giacobetti et al, 1997; Weller et al, 1999). Impaired bloodflow in the damaged arteries does not appear to improve with time (Vaccaro et al, 1998).

Symptoms suggesting carotid sinus syncope include fainting on turning the head or doing up a tie or buttoning up a shirt (A. M. Bronstein, personal communication). This condition is thought to be due to excessive sensitivity of the carotid sinus to mechanical pressure, especially in the elderly. This increased sensitivity may be caused by inflammatory lesions in the cervical spine. Carotid sinus stimulation may result in bradycardia, a severe fall in blood pressure, loss of consciousness, or a drop in heart rate (Cann, 1994).

Can radiological information be used?

Radiological information can be useful in the detection of osseous abnormalities and changes in the cervical spine. However, since there is a poor correlation between anatomical changes and clinical symptoms (Borenstein et al, 1996), the use of imaging can be misleading, as discussed earlier. The majority of patients with radiological osteoarthritis are asymptomatic (Ratkovits, 1994). Similarly, the presence of symptoms will not necessarily be accompanied by structural changes identifiable by imaging. Radiographic evidence of chronic disk degeneration is common in middle age, but almost universal in the elderly (Borenstein et al, 1996). Hence, it is possible that a clinician may identify structural abnormalities on imaging, and assume that these account for the patient's symptoms, when, in reality, a completely different pathology is to blame.

Age-related changes in the cervical spine can result in the development of osteophytes, these being particularly common at the margins of the uncovertebral joints. The relationship of the vertebral arteries to the vertebrae is of interest when considering the potential influence of cervical osteophytes on the artery. The anteromedial part of the vertebral arteries is in contact with the anterior third of the lateral parts of the uncovertebral joints from C2 to C6. The remaining part of the arteries articulates

with the osseous perimeter of the foramen transversarium. The effect of osteophytes on the bloodflow within the vertebral artery depends to some extent on the degree of atheroma within the artery wall (Constantin and Lucretia, 1971).

Although some sources report mechanical compression from cervical osteophytes affecting bloodflow through the vertebral arteries (Sheehan et al, 1960; Kiwerski, 1991; Nakamura et al, 1998), the evidence is not substantial, and this is thought to be an exceptionally rare occurrence (P. J. Martin, personal communication). One publication reported that with the head rotated to the left, mechanical compression of the right vertebral artery at the occipitoatlantal joint and an occluded left vertebral artery was noted. The symptoms of dizziness and faintness on head-turning were resolved with surgical decompression (Nakamura et al, 1998). Other sources report surgical procedures to remove osteophytes being successful in relieving symptoms of nerve root irritation, but less successful in relieving symptoms of vertebral artery compression and vertigo (Kiwerski, 1991). Nonetheless, patients with ischaemia of the hind-brain caused by genuine haemodynamic vertebrobasilar insufficiency are extremely rare. It is likely that a very high proportion of patients loosely labelled as suffering from 'vertebrobasilar insufficiency' in fact have BPPV.

There are certain pathologies, however, in which the use of imaging is entirely appropriate. A close correlation between anatomical changes identified by imaging and clinical symptoms occurs with some specific disorders such as spinal cord tumours and metabolic bone disease, and where these conditions are suspected, imaging of the cervical spine is appropriate (Borenstein et al, 1996). A suspicion of malignancy should be raised when a patient complains of night pain, night sweats, unexplained weight loss, and general feeling of being unwell. Other conditions where an X-ray of the cervical spine would be appropriate would be rheumatoid arthritis and whiplash, and in situations where cervical spine symptoms do not resolve following appropriate intervention. When the audiologist is faced with a patient with persisting cervical spine symptoms that have not been investigated, it would be appropriate for them to be referred for thorough investigation by a musculoskeletal specialist.

Vertebrobasilar system

The vertebrobasilar system provides bloodflow to the structures of the vestibular system, including the inner ear, VIIIth nerve, brainstem, and cerebellum. Reduced bloodflow through the vessels can cause vertigo. Owing to the close proximity of the vertebral arteries to the cervical spine, the vertebral artery can be compressed during head rotation. The vertebral artery can be compressed at the transverse foramen of C6, within the transverse foramina from C5 to C2 at the atlantoaxial joint, and at the occipitoatlantal level (Toole and Tucker, 1960; Brown and Tatlow, 1963; Hanakita et al, 1988). However, unilateral occlusion does not produce vertebrobasilar ischaemia (posterior circulation ischaemic disease), due to the bloodflow being preserved by the opposite vertebral artery and the circle of Willis (Nakamura et al, 1998; Welsh et al, 2000).

Vascular pathology in the vertebrobasilar arteries

The posterior (vertebrobasilar) circulation is subject to the same pathology as the anterior (carotid) circulation. Most transient

ischaemic attacks (TIAs) in the posterior circulation, like carotid TIAs, are embolic (Martin, 1998). MRI, magnetic resonance angiography and duplex sonography are reported to be useful in detecting the blood vessel disorders and ischaemic changes in the brain (Fujita et al, 1995; Miura et al, 1997; Inui et al, 1998a,b; Nakamura et al, 1998). Vertigo or blackouts due to vertebrobasilar ischaemia rarely present in isolation (Miura et al, 1997; Martin, 1998). There are often associated neurological symptoms resulting from ischaemia in the area supplied by the vertebral artery, including diplopia, ataxia, dysphagia, dysarthria, transient loss of consciousness, and sensory disturbance in the upper limbs (Troost, 1980; Coman, 1986; Luxon, 1990; Miura et al, 1997; Martin, 1998). However, vertigo or imbalance has been reported in a series of 27 patients with a confirmed diagnosis of TIAs of the vertebrobasilar system (Kumar et al, 1998).

Although it is believed that 'vertebrobasilar insufficiency' is over-diagnosed, particularly in the elderly (Martin, 1998), if referrals for assessment of dizziness are received prior to medical consultation, the patients should be screened for any associated symptoms of vertebrobasilar ischaemia before testing. Associated symptoms of ischaemic disease include ataxia, dysarthria, limb weakness and numbness, hemianopia, diplopia, drop attacks, and dysphagia (rarely).

Absolute contraindications to the Dix-Hallpike manoeuvre

In summary, the following should be considered as absolute contraindications to the Dix-Hallpike manoeuvre: history of neck surgery, severe rheumatoid arthritis, atlantoaxial and occipitoatlantal instability, aplasia of the odontoid process and os odontoideum, cervical myelopathy, cervical radiculopathy,

carotid sinus syncope, recent neck trauma, Arnold-Chiari malformation, and vascular dissection syndromes.

A suggested functional assessment protocol

There is good evidence that the Dix-Hallpike manoeuvre is a safe procedure. However, if the optimal practice of a medical screen by an informed physician is not available, the patient should be screened for absolute contraindications using the screening checklist in Table 1. A brief assessment of the range of movement of the cervical spine should then be undertaken prior to testing. The following protocol, which is under trial in our clinic, is suggested:

1. Determine if the patient currently has neck pain.
2. While the patient is in a sitting position, the head should be placed at 45° rotation on each side (Figure 1a). If the position can be maintained for 30 s without pain or discomfort, then at least the side-lying test can be performed (described below).
3. The patient's head is then placed at 45° rotation with neck extension on each side (Figure 1b). If this position can be maintained for 30 s without pain or discomfort, then the Dix-Hallpike manoeuvre should be performed as usual.

A modified procedure

The use of a modified procedure termed the *side-lying test* has been suggested as an alternative to the traditional Dix-Hallpike manoeuvre (Herdman and Tusa, 1998). In this test, the patient sits on the side of the examination couch. The head is then turned 45° and the patient quickly lies down on the opposite side (Figure 2). Care must be taken, however, as this procedure may place considerable rotation and extension stresses on the

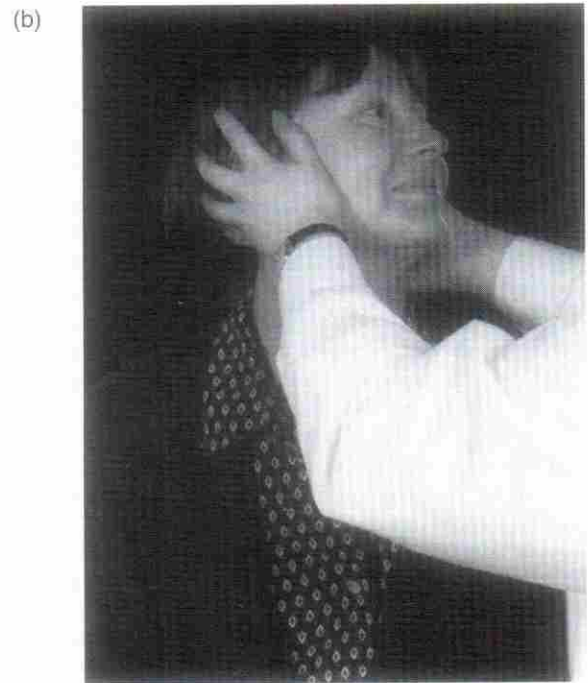


Figure 1. Functional assessment protocol. (a) The patient's head is placed at 45° rotation. (b) The patient's head is placed at 45° rotation with neck extension.

spine, and patients who suffer from back pain may find this procedure uncomfortable. For patients with back pain, the conventional test position may be more comfortable, as in this test the spine is flat against the couch (A. M. Bronstein, personal communication). It is suggested that if during the preliminary assessment of the functional status of the patient's neck the head can be comfortably rotated, but extension is not possible or is painful, then the side-lying test should be performed (provided that the patient does not have back pain).

It is important to note that, in our experience, some patients can pass the functional assessment, yet still experience discomfort (possibly due to the additional effect of gravity). The possibility of this should be explained to the patient prior to testing, and, provided that they agree, the test should proceed (A. M. Bronstein, personal communication).

Mechanical alternatives

Mechanical alternatives to the Dix-Hallpike manoeuvre now exist which produce minimal interference with neck structures. Three-dimensional whole-body rotators have been used by

Lempert et al (1997) and Furman et al (1998), although it is recognized that these devices are not easily available. It is also possible to look for positional nystagmus in wheelchair-bound patients with disabling neurological disease or severe spine problems in their own wheelchairs. The patient's head is rotated sideways by 40–45°, and, with the brakes on, two assistants tip the chair back 70–80° (A. M. Bronstein, personal communication).

Cautions

Back problems

The Hallpike manoeuvre necessarily places a degree of stress on a patient's lower back, and a cautious approach should be taken with patients suffering from back pain. In the conventional procedure, the patient has the knees bent, which is often more comfortable than the modified position where the feet of the patient hang down from the couch and produce some rotation on the spine. Again, the severity of symptoms rather than nominal pathology or radiographic information is the important factor to consider. For example, a prolapsed intervertebral disk is not an absolute contraindication, provided that the patient has the range of movement necessary. Simply knowing whether or not the patient is able to lie supine from a sitting position should be sufficient. If the patient is unable to lie supine with knees bent, the side-lying test may be more appropriate.

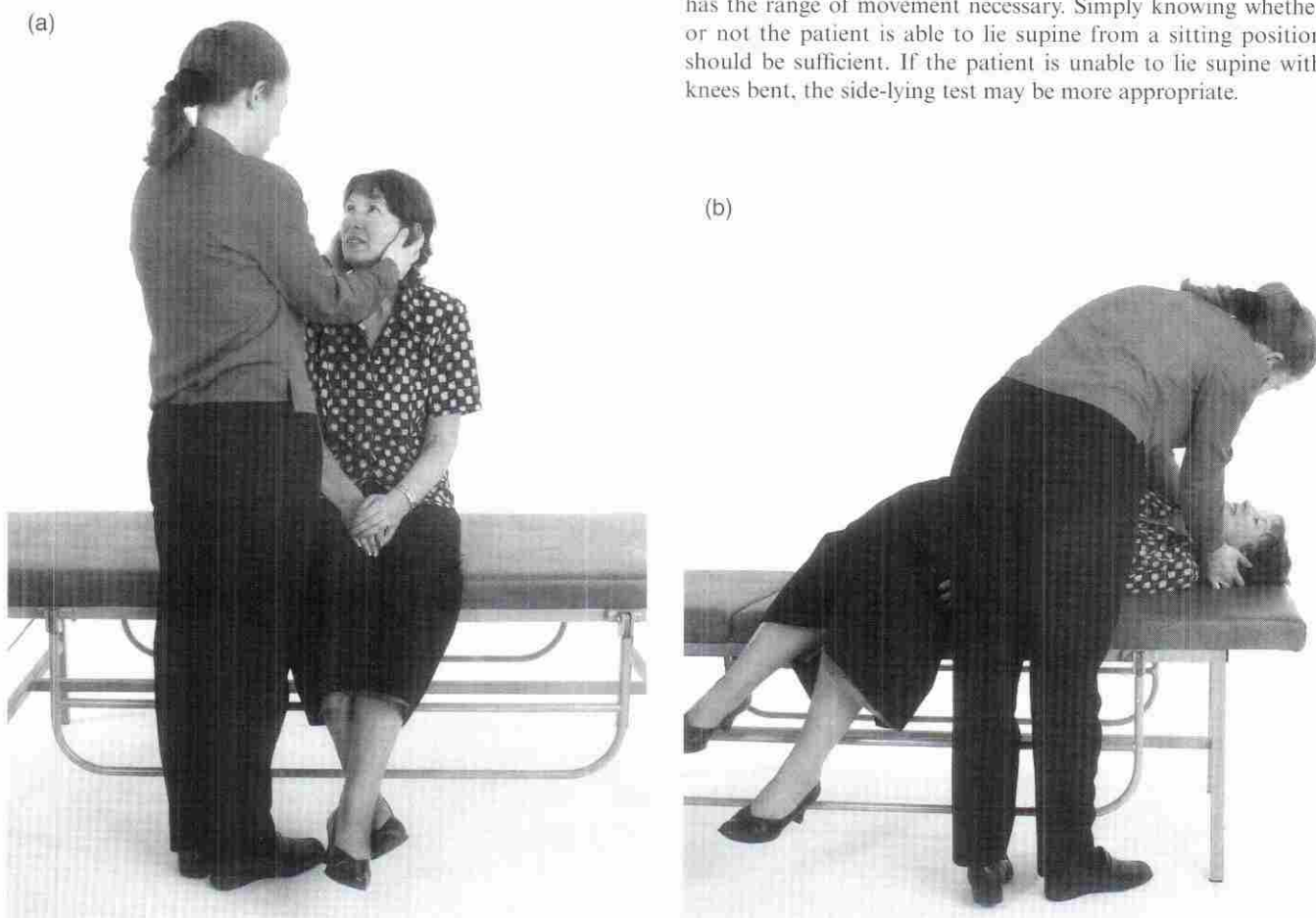


Figure 2. The side-lying test. (a) The patient sits on the edge of the couch with her head rotated 45° away from the labyrinth to be tested (left labyrinth is being tested here). (b) The patient is then quickly brought down on the side opposite to the direction in which the head is turned, with the eyes being observed for nystagmus. The patient is then brought back to the sitting position and the eyes are observed again (not shown).

Other medical problems

A patient must be medically fit to undergo the test. Someone with severe cardiac or respiratory problems will be unable to tolerate such a procedure. For example, orthopnoea is a condition in which a patient struggles for breath if he or she lies down.

Conclusion

In the vast majority of individuals, the Dix–Hallpike manoeuvre is a safe and effective diagnostic test for BPPV. However, care must be taken to screen the patient for relevant symptoms and signs of cervical pathology. When medical fitness for testing is in doubt, a physician's opinion should be sought. Patients with back pain can safely undergo the side-lying test. For those patients in whom absolute contraindications are not present, a simple procedure for the assessment of functional neck mobility and suitability for the Dix–Hallpike manoeuvre in an audiological context is described above.

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