BENIGN PAROXYSMAL POSITIONAL VERTIGO AS A RARE COMPLICATION OF PROLONGED BEDREST

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SUMMARY:
A case of benign paroxysmal positional vertigo as a complication of prolonged bedrest is reported. The cause of this rare type of vertigo was considered to be postoperative bedrest which might have facilitated the deposition of precipitate on the cupula of the posterior semicircular canal. Physical therapy management was discussed.

KEY WORDS:
Benign paroxysmal positional vertigo, physical therapy, vestibular system

Benign paroxysmal positional vertigo (BPPV) is the type of positional vertigo, with characteristic vestibular manifestations(4,10). Schukncht(6) reported that when a patient has predisposing pathology at the utricle, maintaining a certain head position for a long time may result in deposition of degenerated material of the utricular macula and induce cupulolithiasis.

We are herein reporting a case of BPPV that developed after prolonged bed rest.

CASE REPORT
The patient was a 30-year-old man with left L4-5 HNP who was prescribed 45 days restricted bed rest since he refused to undergo surgical intervention. After the bed he still had pain in his left leg and 2/5 weakness had developed in the anterior tibial and external hallusis longus muscles. Therefore surgical intervention, left L4 hemilaminotomy, L4-5 discectomy and foraminotomy was performed. The postoperative period was uneventful. He was mobilized the day after operation. but, 14 days later, started to complain of the sudden onset of vertigo when moving rapidly. e.g. rolling over in bed, streightening up after bending over or suddenly turning his head. He had disequilibrium and abnormal postural responses and was unable to stand alone when he closed his eyes. He had no previous otological problem or vertigo. Neurological and ear nose and throat examinations were normal, except that nystagmus was observed during the vertigo which lasted 10 to 20 seconds. The nystagmus was torsional with the eyes directed toward the right side. Cranial CT was normal. positional tests showed the typical signs and symptoms of BPPV. These symptoms continued without any regression for 8 weeks despite his full activities. Since they were very troublesome and restricted quick movements he was recommended to do Brandt's exercises, which is the physical therapy management of benign paroxysmal positional vertigo(1). The symptoms and signs rapidly disappeared within 6 days.

DISCUSSION
Dizziness, vertigo and disequilibrium are not rare in the early postoperative period. The most common cause is hypotension which disappears within a few days. BPPV is a frequent aetiology of these symptoms after cranial trauma and middle ear surgery but this complication can sometimes be seen after operations for other conditions especially in patients who have bed rest for a long period(2). The pathology of this complication is thought to be due to cupulolithiasis, which are deposits of a precipitate of degenerated material of the utricular macula on the cupula of the posterior semicircular canal(8). Strict bed rest may facilitate the induction of cupulolithiasis and as a result the symptoms and signs were seen in our patient who had predisposing pathology at the utricle.

Hall et al(3) proposed a different theory "Canalithiasis", according to which, debris is free-floating in the endolymph. When the head is moved the endolymph moves and pulls on the cupula, exciting the neurons as a result. The characteristic findings are vertigo and nystagmus; vertigo occurs when the patient
moves rapidly into a supine position with the head
turned. Nystagmus and vertigo develop 1-40 seconds
later and disappear in 30-60 seconds. Nystagmus is
characteristically torsional with the eyes directed to­
ward the affected side. Therefore if a patient com­
plains of vertigo, disequilibrium and nausea after a long
period of bed rest BPPV should be borne in mind and
the appropriate physical therapy given otherwise the
symptoms persist and restrict mobility.

Several approaches have been developed to tre­
at patients with BPPV. Brandt's exercises, proposed
by Brandt and Daroff(1), liberatory manoeuvre, pro­
posed by Semont et al(9) and habituation exercises
suggested by Norre and Becker(5,7) are recommend­
ed as effective therapeutic methods. Brandt exerci­
ses require the patient to move into the provoking
position repeatedly several times a day and stay in
that position till the vertigo stops and then sit up aga­
in. remain in the sitting position for 30 seconds then
move in the opposite direction stay in that position
for 30 seconds, and then sit up again. This manoe­
uvre is repeated every 3 hours until the patient has
no vertigo for 2 consecutive days. It is presumed that
the effect of this exercise is to dislodge the debris from
the cupula of the posterior canal and displace it where
it will no longer contact the cupula. The other possi­
bility is central adaptation for the repeated signal
from the posterior canal(4). In the liberatory manoe­
vre the provoking position must be found and then
the patient is moved from a sitting position to the
provoking position. He stays in this position for 2-3
minutes, then his head is turned to the opposite ear­
down position, he stays in that position for 5 min­utes
then returns to sitting position. This only requires
a single treatment but the disadvantage is that the
patient must remain a vertical position for 48 hours
and avoid the provoking position for a week which is
somewhat difficult for some patients.

These manoeuvres are 84% - 93% efficient(9). The­
re was no significant difference between these meth­
ods(6). In our case, the symptoms were diminished
within 6 days after Brandt's exercises.

In this report we present a rare case of BPPV due
to prolonged bed rest and the aetiology and treatment
modalities are discussed in the light of the literature.

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