

Effect of postural changes on normal and stenosed common carotid artery using FSI

ABSTRACT

Gravity associated with postural changes has a strong bearing on haemodynamics of blood flow in arteries. Its effect on stenosed cases has not been widely investigated. In the present study, variation observed in blood flow during postural changes is investigated for different conditions like standing, sleeping and head-down position. A fluid structure interaction study is carried out for idealized normal and 75 % eccentric and concentric stenosed common carotid normal artery. The results clearly indicate the effects of altered gravity on flow conditions. It was found to be very significant during head-down position and demonstrated very high arterial blood pressure in stenosed common carotid when compared with normal carotid.

Keyword: Altered gravity; Carotid bifurcation; FSI; Stenosis