Suboccipital craniotomy

Suboccipital craniotomy (SOC) can be classified into three types: midline, paramedian and lateral according to the site of linear incision. They are subdivided horizontally into cranial, intermediate and caudal, while the latter of the lateral SOC should be included into the paramedian caudal one.

Sitting position for the craniotomy has several advantages over other positionings in spite of several known drawbacks especially air embolism: cleanliness of the operative field, good anatomical orientation, wider operative spaces obtained by gravitational downward displacement of the cerebellar hemisphere above all.

Linear incision is considered to have no definite drawbacks as compared with other incisions such as the horse shoe or the hockey-stick incision and rather have advantages such as enabling effective access to the surgical target by the use of navigation, simpleness of craniotomy in the opening and the closure, and less pseudomeningocele complication.

Although cranial and intermediate lateral SOCs are mainly for lesions in the upper and middle CP angle such as acoustic neurinomas or meningioma besides MVD for trigeminal neuralgia, these are applied also for cavernomas of the tectal and cerebellar peduncle, and meningiomas or chordomas of the upper and middle 1/3 of the petroclival region.

Importance of the SCTTA by cranial paramedian SOC for the management of lesions in the temporoposteromedial region including the tentorium and its incisura was emphasized and peduncular lesions at the lamina tecti and pons as well. Caudal paramedian SOC is appropriate for lesions in the lower CP angle along with MVD for hemifacial spasm and is furthermore applicable for foramen magnum meningiomas or lower clivus meningiomas by TVDRA.

Cranial midline SOC (paraculminar approach) is applicable for tumors of pineal regions and for lesions at the midbrain, thalamus, posterior part of the IIIrd ventricle. The TFUTA by lower midline SOC enables simple access to the IV ventricle and its floor for management of lesions at the tegmentum pontis such as cavernomas.

Statistics of a series of consecutive 1,573 surgical cases in the sitting position (1994-2003) are presented including detection rate of air embolism on the anesthetic charts.

Air embolism was most frequent (21%) in the lateral SOC as compared with other SOCs (8.8% on the
average). This happened during the extradural procedures in 80% and in 20% in the intradural procedures. Some important technical managements of bridging veins, venous plexus and cerebellar retraction are discussed in carrying out the SOCs ¹).

see far lateral suboccipital craniotomy

retromastoid suboccipital craniotomy

see suboccipital approach