SUMMARY

The vertebral column forms the central axis of the skeleton. It supports the head and trunk on the pelvis and it gives great protection to the spinal cord from external violence. The vertebral column is formed of thirty three vertebrae with their intervertebral disc, ligaments and muscle attached to them. The pathological conditions affecting the vertebral column may be traumatic, congenital or acquired deformities, degenerative diseases and tumours which may be benign or malignant. Skeletal deformities of the spine may lead to respiratory and/or circulatory impairment. The pulmonary function abnormality seen is a restrictive pattern with the greatest reduction occurring in the vital capacity. Moreover it results in reduction in chest wall compliance and increase in pulmonary vascular resistance. Cardiovascular changes associate with scoliosis are right ventricular hypertrophy, pulmonary hypertension and right atrial enlargement.

Scoliosis may affect cervical, thoracic or lumbar regions. They are more susceptible to malignant hyperthermia during anesthesia than the general population. In the majority of cases death occurs due to respiratory or heart failure. Pre-operative evaluation is necessary and it should include pre-operative meeting of patient and anestheisologist as it reduces anxiety.

Recommended pre-operative medication for adult patients prior to elective surgery include: patient interview by anesthesiologist the day before surgery, oral flurazepam to treat insomnia the night before surgery.

Diazepam 1-2 hours before surgery, glycopyrrolate intramuscularly when patient is ready to be transported to the operating room if an anti-sialagogue effect is desired. orally 1-2 hours before induction of anesthesia.

There are four classical positions commonly used in surgery of vertebral column, supine, prone, lateral and sitting. Basic monitoring of

the patient under anesthesia include ECG, body temperature measurement, peripheral nerve stimulation, central venous pressure, urine flow measurement, oxygen concentration monitoring, direct measurement of arterial blood pressure and somatosensory cortical evoked potential. Patients with high spinal cord injury are monitored with direct blood pressure and pulmonary artery catheter. Minor operations are best to be done by laryngeal mask to avoid the use of endotracheal intubation which may be difficult in these cases. Major operations are to be done under general anesthesia which should be induced by pre-oxygenation, narcotic relaxant combination and N_2O/O_2 with controlled ventilation, which may be, supplemented by enflurane or halothane in allow concentration less than 1% to avoid its myocardial depressant effect.

Problems during anesthesia and surgery include:

Malignant hyperthermia, extensive blood loss, hypothermia and hypotension. Malignant hyperthermia is diagnosed by increased body temperature, tachycardia, tachypnea arrhythmia and change of blood pressure which is treated with cessation of the use of fluothane, cooling of the patient and using dantrolene and continuing surgery by the use of N_2O. Blood loss can be decreased by the use of local adrenaline, cautery and also by using drug as sodium nitroprusside or trimetaphan or both with transfusion of ringer's lactate and then blood transfusion and diuretics at the end of operation.

Recovery from anesthesia should be as smooth as possible, after operation anestheiolgist must notice the patients respiration, blood pressure, heart rate and body temperature, than the endotracheal tube is withdrawn after suction of secretions and the patients regains his normal respiration.