A specimen of a skull cap showing oval, depressed comminuted fracture of the frontal bone, 3cm x 2 cm, in size. The longest diameter of the fracture is placed obliquely and the direction was backward and to the left from the right. The center is situated 1.7 cm to the front and 0.6 cm to the left from bregma. The posterior left quadrant shows a defect with missing piece. There are two linear fractures 0.3 cm and 0.5 cm in length, extending horizontally to the right from the right edge of the depressed fracture, which is slightly more depressed than the rest. There is another very faint semicircular fracture line, 2.5 cm in length, running parallel to the right edge, seen 0.8 cm away from the edge.

Since the posterior left quadrant is missing, the point of maximum depression cannot be seen. However, it seems to be at the centre. Both tables are involved. The edges are not showing signs of healing or infection. The fracture is overlying the groove for superior sagittal sinus.

(Appearance of ‘inner beveling’ is due to the missing pieces of fractured bones from the inner table.)
Conclusions & opinions:

Weapon:-

The shape and the presence of beveling of the bone deficiency indicate that the cross section of the object has to be circular and it should hit the skull with a high kinetic energy.

The diameter of the deficiency is smaller than that of the bullets of commonly used rifled cartridges such as revolver, semiautomatic pistols or T56 cartridges. Moreover, absence of radiating fractures makes it unlikely that it was fired from a high powered rifled weapon such as T56.

Possibility of a single pellet injury cannot be totally ruled out. However, if we think for a moment that this injury has been caused by a pellet injury. Then the extent of dispersion of pellets as indicated by the absence of pellet injuries of the rest of the skull cap indicates that it should have been a distant range firearm injury. If so, the pellets reaching the target from that range are unlikely to cause penetrating wounds on the skull as they do not have sufficient kinetic energy to penetrate a thick and strong bone like skull.

The other weapons, which give rise to round shrapnel of small diameters with sufficient kinetic energy when detonated to penetrate the skull are ‘bombs’. Therefore, it is very likely that this could be a shrapnel injury caused by a bomb explosion.

Direction of the blow:-

The victim should be facing the direction of the bomb explosion at the time of the injury.

Circumstances :- Since the shrapnel injuries are caused on the victims, who are away from the centre of the explosion this is unlikely to be a suicidal bomb explosion. However, it cannot be concluded whether this is homicidal or accidental with the available facts.

Probable Cause of Death :- Penetrating injury to the brain. (However, victim might have had other injuries caused by bomb explosions on the rest of the body, which cannot be guessed as it is not available for our examination.)

Dating of injury:- The victim should have died immediately after sustaining head injury as there is no signs of healing.