

Abstract

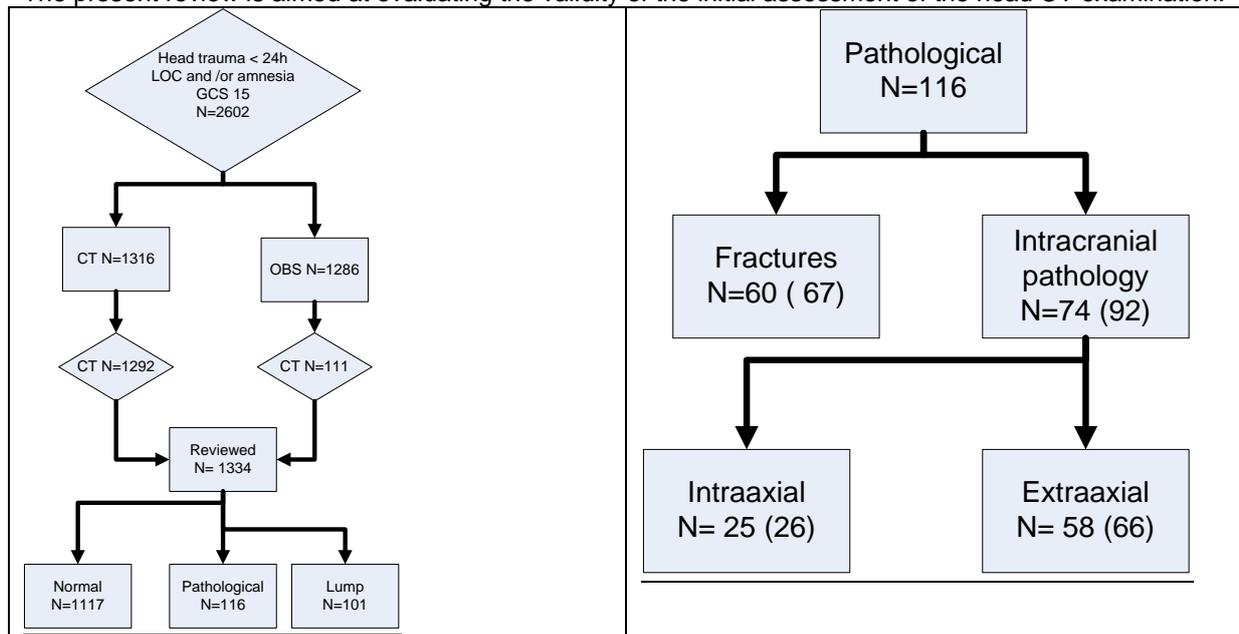
Brain CT for minimal head trauma, a quality evaluation of the OCTOPUS study.

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Introduction: The OCTOPUS (Observation or Computed Tomography for Mild Head Injury in Sweden) study randomised 2602 patients with mild head injury to CT or observation. The results showed no significant difference in medical outcome but better cost benefit ratio for those patients performing CT.

The present review is aimed at evaluating the validity of the initial assessment of the head CT examination.



Results

Of the 1334 reviewed CT examinations 1117 were normal (83,7%), 116 (8,7%) pathological and 101 with soft tissue swellings (8,7% as isolated finding).

The octopus study board classified the initially reported findings as traumatic pathology, group 1, unclear group 2 or pathology not related to trauma, group 3. The octopus groups 1 and 2 comprised a total of 62 patients, compared to the total number of pathological findings in 116 patients in our review, an 87% increase in the number of findings.

A further analysis of the discrepancies between the initial OCTOPUS interpretation and this review was then performed. 48 studies were found to have significant error, i.e. missed bleeding or fracture, a further 9 had findings with unclear impact on the brain, ie missed orbital floor fracture. False positive initial reports were 5, i.e. falsely interpreted suture as fracture. There were also 26 cases where the definitive radiology report was correct but where the original preliminary radiology report, being the basis of the octopus classification, was unobtainable and possibly different. It is also possible that the clinician in charge of the patient misinterpreted the radiology report.

OCTOPUS included patients with no associated injuries, despite which facial fracture was present in 40 patients (3%). Although the target of the present study was brain CT pathology, suspicion of facial fracture is a clear indicator for CT evaluation of the face. However 5 of the patients with facial fractures also had intracranial findings (5/40=13%)

It is somewhat alarming that in this controlled trial including patients with normal results on neurological examination; Glasgow coma score of 15 intracranial pathology or fractures were present in 116 (8,7%).