

patients with "micro bleeds" seen on brain MRI sequences sensitive for haemosiderin and is definitely diagnosed by demonstration of congo red staining of amyloid in cerebral vessels. There is no specific therapy.

COCAINE INCLUDED HEMORRHAGE

This is frequent cause of stroke in young age (>45 years) patients. Intra cerebral hemorrhages, ischemic stroke and SAH are all associated with cocaine use.

HEAD INJURY

This often causes intracranial bleeding. The common sites are intracerebral (esp. temporal and inferior frontal lobes) and in to the subarachnoid, subdural and epidural spaces. Trauma must be considered in any patient with an unexplained acute neurologic deficit (hemiparesis, stupor or confusion), particularly if the deficit occurred in the context of a fall.

ANTICOAGULANT THERAPY

Intracranial hemorrhages associated with anticoagulant therapy can occur at any location; they are often lobar or subdural. Anticoagulant related intracerebral hemorrhages may evolve slowly, over 24 to 48 hrs. Coagulopathy should be reversed with FFP or factor replacement, vitamin K and platelet transfusion in case of & decreased platelets, to limit the volume of hemorrhages.. Intra cerebral haemorrhages associated with hematologic disorders (leukemia, aplastic anemia, Thrombocytopenic pururas) can occur at any site and may present as multiple intracerebral haemorrhages.

BRAIN TUMORS

Haemorrhages in the brain may be the first manifestation of neoplasm; cholangiocarcinoma, malignant melanomas, renal cell carcinomas and bronchogenic carcinomas are among the most common metastatic tumors associated with intracerebral haemorrhage. Glioblastoma multiforme in adults and medulloblastoma in children may also have areas of intracerebral haemorrhage.

HYPERTENSIVE ENCEPHALOPATHY

This condition is a complication of malignant hypertension, characterized by severe hypertension associated with headache, nausea, vomiting, convulsions, confusion, stupor and coma.

There is retinal haemorrhages, exudates, papilloedema (hypertensive retinopathy) and evidence of renal and cardiac disease.

INVESTIGATIVE APPROACH

CT Scan: This is the most important tool and confirms the diagnosis in most ICH cases. It defines the size, site and surrounding oedema and midline shift. It can also identify hydrocephalous, tumour bleed and occasionally AV malformations.

MRI Scan: MRI brain is not routinely used but in situations like tumour bleed, AV malformation and other bleeds gives better view of tumours, malformations and aneurysms.

CT Angio or MRI Angio & Conventional Angiography of intracranial vessels are needed in cases of atypical ICH or suspected AV malformation, particularly if the patient is young or not hypertensive and the hematoma is not in one of the four usual sites for hypertensive haemorrhage; for example, haemorrhage in to the temporal lobe suggests rupture of a MCA saccular aneurysm.

A detailed history and examination along with routine laboratory investigations esp. liver function tests (LFT's) and Coagulation profiles are essential to identify and treat the underlying basic systemic illness.

CONCLUSION

Hypertension, trauma and cerebral amyloid angiopathy cause the majority to these haemorrhages. Advanced age and heavy alcohol consumption increases the risk, and cocaine use if one of the most important causes in the young.

RECOMMENDED READING

1. Brott T, Broderick J, Kothari R, et al. Early hemorrhage growth in patients with intra cerebral hemorrhage. *Stroke* 1997;28:1-5.
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3. Hemphill JC, 3rd Bonovich DC, Besmertis L, Manley GT, Johnston SC. The ICH score: a simple, reliable grading scale for intracerebral hemorrhage. *Stroke* 2001;32:891-897.
4. Lawrentschuk N, Kariappa S, Kaye AH. Spontaneous intracerebral hemorrhages-warfarin as a risk factor. *J. Clin Neurosci* 2002;0:550-552.
5. Mayer SA. Ultra early hemostatic therapy for intracerebral hemorrhage. *Stroke* 2003;34:224-229.
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ETHICAL GUIDELINES FOR BIOMEDICAL RESEARCH

The need for uniform ethical guidelines for research on human subjects is universally recognised. It has acquired a new sense of urgency as the critical issues in the area of biogenetic research involving human subjects have become acute. Apart from the mandatory clinical trials on new drugs, a number of diagnostic procedures, therapeutic interventions and prevention measures including the use of vaccines, are being introduced which involve human subjects. Further the advent of new medical devices and radio-active materials and therapeutic benefits of recombinant DNA products have added a new dimension to the ethical issues that need to be considered before evaluating these for their efficacy, utility and safety.

Any research using the human beings as subjects shall bear in

mind the following principles of : i) **essentiality**, (ii) **voluntariness**, **informed consent**, (iii) **non exploitation**, (iv) **privacy and confidentiality**, (v) **precaution and risk minimisation**, (vi) **professional competence**, (vii) **accountability & transparency**, (viii) **maximisation of public interest and distributive justice** (ix) **institutional arrangements** (x) **public domain** (xi) **totality of responsibility** and (xii) **compliance**.

Recent advances in the field of **Assisted Reproductive technologies**, **organ transplantation**, **Human genome analysis**, and **gene therapy** promise unquestionable benefits to mankind. At the same time, they raise many questions of law and ethics, stimulating public interest and concern.

(Source : ICMR Publication 2000)

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