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Anaplastic astrocytoma associated with human growth hormone administration

Sir: Laron and Josefsberg¹ reported two deaths out of 166 children treated with human growth hormone (HGH). One of these died from a large cystic brain tumour shown on angiography; however necropsy was not performed and no histological diagnosis made. They called for further reports of neurological disease and deaths encountered in other patients on HGH therapy.

In Glasgow, an 18 year old male who had been treated with HGH for seven years, later developed an astrocytoma. Only 35 cases of astrocytoma have been recorded in the West of Scotland between 1974-1983 in the 15-25 year age-group (personal communication. West of Scotland Cancer Surveillance Unit). This patient was started on HGH therapy at age 9 years in 1977, in a dose of 4 I.U. three times weekly until 1984. In 1986 he presented with a ten day history of headache, malaise, nausea and vomiting. On examination he had papilloedema, and a computer tomography brain scan revealed a large cystic tumour deep in his right parietal lobe. Major craniotomy was not recommended as this was liable to cause severe neurological deficit, and a limited biopsy procedure was performed, revealing anaplastic astrocytoma on histology. He deteriorated rapidly and died.

Natural HGH has been withdrawn in both UK and USA because of its association with Creutzfeldt-Jacob disease,² but association with astrocytoma has not previously been described.

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Skull base chondroma presenting in pregnancy

Sir: We present the case of a patient with multiple chondromatosis and rapidly evolving cranial nerve palsies during two successive pregnancies. No skull lesion had been apparent previously. Symptomatic cure followed partial excision of a chondroma arising from the skull base. A subsequent pregnancy proceeded uneventfully to term.

A 29 year old woman complained of left facial numbness and pain after 5 weeks amenorrhoea. Three weeks later she developed a partial left ptosis which became complete after another week.

At the age of 14 she had noticed swellings on the hands and feet, several of which required curettage for cosmetic reasons or because of local trauma. These were benign enchondromata. Asymptomatic lesions were also apparent radiologically in the limbs and in several ribs. Her first pregnancy at the age of 21 yr had been complicated by pre-eclampsia but ended in normal delivery of a healthy baby and the second pregnancy had been terminated "therapeutically" in the first trimester. Fifteen months before this admission she had complained of numbness of the left side of her face after 8 weeks amenorrhoea; this resolved following a spontaneous abortion. No neurological symptoms occurred during her normal menstrual cycle.

Examination revealed scars, localised hard swellings over several long bones and deformity of the left forearm. There was a complete left third nerve palsy and she had reduced sensation in the ophthalmic territory of the left trigeminal nerve, a reduced corneal reflex, anaesthesia of the two lower divisions and an ipsilateral trigeminal motor

palsy. Skull radiographs, CT scan and carotid angiography revealed an enlarged foramen ovale, irregularity of the petrous bone, expansion of the clivus and dorsum sellae, soft tissue mass in the posterior nasopharynx and narrowing and displacement of the internal carotid artery.

Despite the well established benign nature of the limb lesions urgent exploration of the cranial lesion was felt to be indicated as its rapid presentation and progression raised the possibility of malignancy. The pregnancy was terminated on medical advice (with some reduction in facial pain) and one week later craniotomy was performed revealing a pinkish-grey tumour extending into the cavernous sinus and through which the third, fourth, fifth and sixth cranial nerves passed. An extensive internal decompression of the partly mucinous tumour was undertaken. Histology confirmed a benign chondroma with no features of malignancy; there was cellular enlargement and a swollen matrix.

Partial resolution of the third nerve palsy occurred within 3 days and there was full return of sensation in the two lower trigeminal divisions by one week. Further recovery took place and after 9 months the only residual complaint was of infrequent paraesthesiae of the left cheek without any abnormal signs. One year later she expressed a wish to become pregnant again, provoking mixed reactions from her medical advisers. The consensus was in favour of pregnancy before a natural increase in cell numbers and residual tumour bulk could again cause symptoms. Since that time she had an uncomplicated pregnancy, delivering a healthy baby.

Chondromata of the skull are uncommon. Arising from synchondroses, they are slow growing, often solitary and usually benign. An increased tendency to undergo malignant change had been suggested when they occur in patients with multiple chondromatosis (Ollier's disease, dyschondroplasia).¹ Lesions in the skull base usually present with progressive cranial nerve palsies, while those in the vault may act as mass lesions.²⁻⁶ They are said to be more common in females.⁷ The rapid progression of our patient's symptoms was, we believe, due to tumour enlargement under the influences of pregnancy. This is an established feature of intracranial tumour and most histological types can behave in this way, the commonest being astrocytoma, meningioma and neurofibroma.⁸

The mechanism causing rapid enlargement of tumours in pregnancy is the subject of debate. Although the physiological