Burkitt’s Lymphoma

(A report of 3 cases from South India)

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Since the original description of this entity in Africa (Burkitt and O’Conor, 1961), cases of Burkitt’s lymphoma have been reported from various parts of the world (Wright, 1967). In Africa this tumour shows a characteristic geographical distribution dependent on climatic conditions. Similar climatic conditions are also prevalent in parts of India and therefore it is not surprising that cases of Burkitt’s lymphoma are seen in India.

Recently a case of Burkitt’s Lymphoma occurring in a two-year-old child was reported from Mangalore (Bai and Agrawal 1967) and there are four cases in the material of the Tata Memorial Hospital, Bombay, (Wright 1967).

In this report 3 additional cases of Burkitt’s lymphoma from India are represented, two diagnosed from biopsy material and one an autopsy case.

Case Reports

Case No. 1

This 6 year-old male child from Kerala State was admitted with a history of two months duration commencing with pain and loosening of the teeth in the left lower jaw. The teeth were extracted and following this a swelling developed. Patient also had an abdominal mass which was noticed 1 week prior to admission. The interior and left side of the mandible was enlarged by a tumour, pushing the tongue to the right side. There was, in addition, a mass in the right hypochondrium and lumbar region which was firm and nodular measuring 7 x 5 cm.

X-ray of the jaw showed a soft tissue swelling in the region of the mentum and some pockets in relation to the roots of the molar teeth. X-ray chest showed widening of the superior mediastinum consistent with a mediastinal lymphadenopathy. The bone marrow was hypercellular with myeloid series showing a shift to the left and toxic granulation. Blood picture and other investigations showed no abnormality.

Biopsy of the jaw tumour was done and following this the patient was given cobalt therapy 2984 R to the cheek and 1225 R to the anterior abdomen. There was a dramatic improvement initially—the swelling in the jaw regressed and the abdominal mass regressed. But later he developed jaundice, the general condition deteriorated. He was discharged at the parents’ request.

A small piece of homogeneous white tissue 3 x 2 x 1 cm. in size was submitted for examination. On microscopic examination this showed a neoplasm composed of immature lymphoid cells arranged in sheets. The cytoplasm of these cells was scanty and the nuclei dark staining with a powdery chromatin pattern. Studded among these cells were large macrophages with abundant cytoplasm giving the typical “starry sky” picture. These macrophages contained phagocytic material in the cytoplasm (Figs. 1 and 2).

Case No. 2

This 3 year-old male child from Tiruvallur, Madras State, was admitted with severe spasmodic abdominal pains. A diagnosis of intestinal obstruction was made on clinical grounds and a laparotomy was done a few hours after admission. The appendix and terminal ileum were resected. No lymphadenopathy was noted at the time of operation but the mesentery was very friable and following the resection, bleeding could not be controlled, and the child died during the operation.

Appendix, ileum, and mesentery were submitted for examination. The wall of the appendix was thick and was replaced by a uniform pale yellow tumour, a piece of terminal ileum 1 cm.
long was also replaced by similar tumour infiltrate and this extended into the mesentery which showed a uniform thickening without discrete lymph nodes.

Sections from the appendix, ileum and mesentry showed a tumour composed of sheets of small cells with large dark staining nuclei resembling lymphoblasts among which were scattered single or small clusters of macrophages with abundant cytoplasm, some containing phagocytic material. The lining of the intestine was ulcerated.

Case No. 3

This patient, a 6 year-old male child from Cuddapah District, Andhra Pradesh, presented with a history of fever for two months and abdominal distension and pain for one month. The right side of the abdomen was distended. A mass was present in the right hypochondrium extending to the midline and about 8 x 8 cms. in size. The liver and spleen were not palpable. Blood picture, serum protein, I.V.P. and other investigations were normal.
Patient developed right sided pleural effusion on the 6th day after admission. Fluid for bacteriology and cytology showed no organisms in culture and no malignant cells. On the same day laparotomy was done and this revealed a tumour mass measuring 12 x 8 cms. involving the terminal ileum and 12 cms. proximal to the ileocaecal junction. The mesenteric lymph nodes were also involved. The involved portion of the ileum was resected. The patient had a cardiac arrest post-operatively and died the same day.

Specimen submitted for biopsy consisted of 12 cms. of ileum the wall of which contained a tumour measuring 11 x 7.5 cms. The cut surface of the tumour was firm and pale yellow with small areas of haemorrhage.

Microscopically, the tumour was composed of uniform round cells with scanty cytoplasm and dark staining nuclei resembling lymphoblasts. Interspersed irregularly with these cells were numerous large histiocytic cells with cytoplasm containing phagocytosed material giving a typical “starry sky” appearance.

At autopsy the operative findings were confirmed, and in addition tumour was found in the para-aortic lymph nodes near the renal arteries, in the appendix and caecum, in the omentum and diaphragm. In addition small tumour nodules were found in the liver and right kidney.

Other organs including the central nervous system were normal.

Microscopically the appearance was that of a lymphoblastic lymphosarcoma, with sheets of small round cells with scanty cytoplasm and nuclei with condensed chromatin. Macrophages were inconspicuous.

Discussion

All 3 cases satisfy the suggested criteria for the diagnosis of Burkitt’s tumour (Rappaport, Wright and Dorfman, 1967). They showed a tumour composed of uniform primitive lympho-reticular cells with areas having the typical “starry sky” pattern, the involvement in all cases was predominantly extranodal with involvement of the mandible being the presenting feature in case 1 and the other two cases presenting with abdominal masses. Peripheral lymphoid tissue and spleen were spared in all 3 cases. Peripheral lymphoid tissue and spleen were spared in all 3 cases. The age group of these 3 cases is also in keeping with the diagnosis. Although cases 2 and 3 did not show involvement of the jaw, it should be noted that this is not an essential feature for the diagnosis (O’Conor, Rappaport and Smith 1965); involvement of the jaw is not as common in other countries as it is in Africa.

Studies in Africa (Haddow, 1963) indicate that Burkitt’s lymphoma occurs in those regions which have an annual rainfall of more than 20 inches and a mean temperature of the coolest month of more than 60°F. The domicile of the 3 cases presented here fit in with this.

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