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CASE REPORT

Facial palsy as a first sign of an underlying leukaemia in children

Sushil Beri and Nahin Hussain

Abstract:
Facial palsy is not uncommon in children and usually carries a good prognosis for the idiopathic variety. However, it can be a presenting symptom of an underlying malignancy. We report two young girls who presented with unilateral facial palsy and were initially diagnosed as 'Bell's palsy'. One child was treated with steroids and was readmitted two weeks later with pleural effusion and thrombocytopenia. Both had evidence of an underlying malignancy on the blood film and were diagnosed with Leukaemia. Young children presenting with facial palsy should be carefully examined and a possibility of leukaemia be considered.

Keywords: Bell's Palsy, facial palsy, leukaemia, children
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Introduction

Facial paralysis is a well described clinical condition in adults though less common in children. The incidence is estimated to be 2.7 per 100,000 under the age 10 years and 10.1 per 100,000 between the age of 10 and 20 years [1]. Majority of cases are unilateral and idiopathic, called Bell's palsy. It accounts for up to 42-85% of all cases in children [2] and is a diagnosis of exclusion. We report two young girls with acute onset lower motor neurone seventh nerve palsy, as an initial presentation of an underlying leukaemia**.** Both were initially thought to have Bell's palsy but were eventually diagnosed with leukaemia.

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Case report:

Patient 1

A 9-yr old, healthy Caucasian girl was referred by her general practitioner with back pain, secondary incontinence and acute onset left lower motor neurone facial palsy. She did not have any trauma or fever. Clinically she had features of left lower motor neurone type, seventh nerve palsy. Spine was normal and she had normal power and reflexes in her legs. Blood pressure was less than 50th centile for her age. Rest of her systemic examination was unremarkable. She was thought to have Bell's palsy and routine blood tests were organised. Haemoglobin was 9.7gms/dl, leukocytes 5.7x10^9/L (Neutrophils 0.9 x 10^9/L, Lymphocytes 2.9 x 10^9/L) and platelet count of 123 x10^9/L. Peripheral smear showed blast cells suggesting the possibility of acute leukaemia. MRI scan of her spinal cord showed a mass infiltrating the

spinal nerve roots leaving the S1 level and leading to obliteration of the spinal foramen. Bone marrow confirmed the diagnosis of acute myeloblastic leukaemia. She was treated with chemotherapy and radiotherapy as per the local oncology protocols.

Patient 2

A 9-yr old girl presented with acute onset headache and inability to close left eye for one day. She suffers from chronic asthma and was on regular inhaled Fluticasone, Serevent and Monteleukast. She had recurrent doses of oral steroids in the last 3 months prior to this episode for acute exacerbation of asthma. On clinical examination she had left, lower motor neurone facial palsy. There was no pallor, lymphadenopathy or hepato-splenomegaly and was otherwise very well. She was diagnosed as Bell's palsy and was given one week's course of oral prednisolone, with a plan to taper over the second week. She returned after 2 weeks with headaches and petechial spots were noticed over the sides of neck and feet along with right pleural effusion. Her haemoglobin was 11.7 gms/dl, leukocytes 47 $x10^9$/L (Neutrophils 5.2 $x10^9$/L, Lymphocytes 29.4 $x10^9$/L), platelet count of 75 $x10^9$/L with 96% blast cells on the peripheral film. On further questioning, it was evident that she had loss of appetite for couple of months besides tendency to bruise easily and occasional epistaxis. CT scan of the chest revealed large mediastinal mass of lymph nodes and thymus compressing the superior vena cava and innominate veins but the airway was intact. Immuno-pheno typing confirmed T cell acute lymphoblastic leukaemia (ALL) and she was treated according to the local oncology protocols.

Discussion:

Facial palsy can occur as a complication of haematological malignancies due to relapse of the underlying disease, but is very rarely reported as a presenting symptom itself [3,4]. However the frequency of 'symptomatic' facial palsy is higher in younger age group as compared to the 'idiopathic' variety [5].

Association of facial palsy with malignancies in not new and has been described in the literature [6] Katz et al. described history of transient facial palsy in 18% of their patients with Burkitt's lymphoma. Cartwright et al. [7] reported 1% incidence of lower motor neurone facial nerve palsy in patients with lympho-proliferative malignancies. However in majority of patients facial nerve palsy was diagnosed at least five years before the presentation of malignancy. Possible etiological factors leading to facial nerve weakness could be either due to direct infiltration of leukemic cells into the facial canal or increased predisposition to infections due to suppressed immunity in these children.

Bilavsky et al. [8] reviewed all 8 children published in the literature until 2002 who presented with facial palsy and had leukaemia. They found that the age of children ranged from 8 months to 17 years and time from the appearance of facial paralysis to the diagnosis of leukaemia varied from 1 day to 1 month. Although acute lymphoblastic leukaemia is 7 times more prevalent than acute myeloid leukaemia in children, six of the total eight children described with facial paralysis had acute myeloid leukaemia. Five children had chloroma or granulocytic sarcoma which is a localized tumour composed of immature cells of granulocytic line associated with myeloid leukaemia. In majority of cases tumour was close to the middle ear and infiltrated the temporal bone. In our patient there was no evidence of associated localised tumour.

Our two patients had facial palsy as the primary presenting symptom. Patient 1 also had secondary incontinence with backache and a routine full blood count showed blast cells. Patient 2 was initially diagnosed with Bell's palsy and treated with steroids. This might have suppressed the underlying malignancy and delayed the clinical presentation.

These two cases highlight that the haematological malignancies can rarely present as facial palsy in young children, without other classical signs and symptoms. Early diagnosis and treatment of underlying malignancy is crucial for a better outcome. Detailed history and examination must be carried out in all children presenting with facial palsy to rule out haematological malignancy. Full blood count and blood film should be considered in all children presenting with lower motor neurone facial nerve palsy.

REFERENCES:

1. Singhi P, Jain V. Bell's palsy in children. Semin Pediatr Neurol 2003;10:289-97.
2. May M, Fria TJ, Blumenthal F, Curtin H. Facial paralysis in children: Differential diagnosis. Otolaryngol Head Neck Surg 1981; 89: 841-8.
3. Levy R, Har-El G, Segal K, Sidi J. Acute myelogenous leukemia presenting as facial nerve palsy: A case report. Int J Pediatr Otorhinolaryngol 1986; 12: 49-53.
4. Eser B, Cetin M, Kontas O, et al. Facial nerve paralysis and paraplegia as presenting symptoms of acute myeloid leukemia. Jpn J Clin Oncol 2001; 31: 86-8.
5. Krishnamurthy S, Weinstock AL, Smith SH, Duffner PK. Facial palsy, an unusual presenting feature of childhood leukemia. Pediatr Neurol 2002; 27: 68-70.
6. Katz J, Polliack A, Harushouski I, Ben Oliel R, Marmary Y. Bell's palsy as a sign of Burkitt's lymphoma in children. Blood 1995; 86: 2052.
7. Cartwright RA, Boddy J, Barnard D, et al. Association between Bell's palsy and lymphoid malignancies. Leuk Res 1985; 9: 31-33.
8. Bilavsky E, Scheuerman O, Marcus N, Hoffer V, Garty BZ. Facial paralysis as a presenting symptom of leukemia. Pediatr Neurol 2006; 34: 502-504.