Primary psoas abscess

Primary psoas abscess is a rare infection with no true vagueness and non-specific clinical presentation, especially in children. In Asia and Africa 99.5% of all psoas abscesses are primary, compared with 61% in the United States and Canada and 18.7% in Europe.\(^1\)

Approximately 70% of psoas abscesses occur in patients younger than 20 years of age, with a male preponderance of 3:1.\(^2\) Fifty seven per cent of psoas abscesses occur on the right side, 40% on the left side, and 3% bilaterally.\(^3\) We present the following case and show the magnetic resonance imaging to emphasise the presenting signs, symptoms, and findings of this unusual infection.

A 13 year old white girl was in excellent health until she developed a dull ache in the left iliac fossa and inguinal area.\(^4\) Fifty per cent of patients have abdominal tenderness, but guarding and rebound tenderness are uncommon.\(^5\) Because of the non-specific pain location, the diagnosis of psoas abscess may be delayed or missed. Differentiation between psoas abscess and hip pathology can be difficult; however, prudent physical examination of the hip can be useful. With psoas abscesses there usually is no discomfort on full flexion of the hip, whereas the presence of hip pathology typically elicits pain.\(^6\) Laboratory studies are non-specific and typically show leucocytosis, anaemia, a raised erythrocyte sedimentation rate, and, usually, normal urine analysis.\(^7\)\(^8\)\(^9\)

Plain abdominal radiographs occasionally define an outline of the inflammatory mass. Chest radiographs may disclose minimal pleural effusion or raised hemidiaphragm. An intravenous pyelogram may show deviation of the kidney and ureter. Barium studies may disclose bowel loop displacement and associated gastrointestinal diseases.\(^10\)\(^11\) However, the most important diagnostic image is computed tomography scan (CT) or MRI, which typically show a low density lesion of the psoas muscle and gas within the muscle itself.\(^12\) There may be rim enhancement of the abscess wall with contrast medium injection. Definitive diagnosis is made by fine needle aspiration under imaging guidance, and microbial culture of the causative organism.\(^13\) Abdominal CT or MRI is unavailable, ultrasonography may demonstrate the inflammatory mass.\(^14\) Gallium-67 scanning may be useful in the diagnosis of psoas abscesses and detection of concomitant infectious foci.\(^15\) Differential diagnoses of psoas abscess include bacterial infection of the hip, avascular necrosis of the hip, irritable hip, necrotising fasciitis of the psoas muscle, pyelonephritis, pelvic inflammatory disease, retroperitoneal appendicular abscess, disc, avascular necrosis, vertebral or pelvic osteomyelitis, and epidural abscesses.\(^16\) These entities should be distinguished upon the correlation of history, physical examination, laboratory tests, and imaging studies.

The cause of primary psoas abscess remains uncertain. Proposed mechanisms of psoas abscess formation include haematogenous spread from primary infectious foci or local trauma with intramuscular haematoma formation predisposing to abscess development.\(^17\) In secondary psoas abscess the most commonly associated disorder is Crohn’s disease; other disorders include ankylosing spondylitis, colonic inflammation or neoplasm, disc infections, and a variety of intra-abdominal or retroperitoneal infections.\(^18\) Primary psoas abscesses are caused by a single organism in 87.5% of cases: primary Staphylococcus aureus (88.4%), streptococci (4.9%), and Escherichia coli (2.8%).\(^19\) Blood cultures are positive in 41.7%, usually for Staphylococcus aureus.\(^20\) In the past decade the majority of patients with a primary psoas abscess were intravenous drug users (86%) infected with the human immunodeficiency virus (57%).\(^21\)

Treatment for primary psoas abscess includes percutaneous drainage combined with systemic antibiotic administration.\(^22\) Surgical drainage is preferred for the patients in whom the psoas abscess is associated with underlying bowel disease.\(^23\) With appropriate treatment, psoas abscess rarely results in death (2.5%).\(^24\) Death from psoas abscess is associated more commonly with inadequate or delayed drainage, or both.\(^25\) Our patient responded well to antibiotic treatment and recovered completely.
Klippel-Feil syndrome in the prehispanic population of El Hierro (Canary Islands)

Klippel-Feil syndrome is an uncommon anomaly (1/10,000 births), mainly affecting the cervical spine. The classic clinical triad described by Klippel and Feil in 1912—short neck, low dorsal hairline, and restricted neck mobility—is the result of the fusion of a variable number of cervical vertebrae, sometimes reducing their number, and cervical spina bifida. Extraosseous changes, such as hemivertebra, vertebral body clefts, and thoracolumbar anomalies, are sometimes seen.

In a prehistoric ossuary containing remains of at least 121 subjects in the island of El Hierro (Canary Islands), we noted:

1. A C2-3 block, with both the vertebral bodies and the medial ends of the arches, well preserved right intervertebral foramina, and foramina transversaria (fig 1), and a normal medullary canal. The body of the third vertebra shows intense degenerative signs.

2. A C5-6 block, consisting of two vertebrae with intense degenerative changes fused both by the vertebral bodies and the medial part of the arches. Both cervical blocks seem to belong to the same subject.

3. A well preserved atlas bone, with an incomplete anterior part of the left arch, with sharp, fine proximal, and distal ends (fig 2A), supporting an underlying developmental defect rather than an acquired one.

4. A left hemiatlas (fig 2B); although it is possible that the right body of the bone was partially fused with the left one (and was not recovered in the archaeological excavation), the posterior end of the arch was neither fractured nor fused to any other bony structure, thus pointing to a developmental defect.

Fusion of C2 and C3 (and C5-6), hypoplasia of the arch of the atlas, and complete bipartition of the atlas' constitute distinctive features of Klippel-Feil disease. Thus the subject with the fused C2-3 and C5-6 blocks and the hemiatlas was probably affected by this disease. Possibly, the second atlas belongs to another subject with the same disease, though this possibility should be cautiously admitted. The two atlas bones show different developmental abnormalities. In the newborn, the ossification of the cartilaginous anterior and posterior arches of the atlas takes place progressively from the already ossified lateral masses. Often, especially in the anterior arch, secondary ossification centre(s) appear. In our case it seems that hypoplastic development of the anterior left arch took place. Because the hypoplastic part of the arch is in its middle part, probably, a second ossification centre was present, but ossification was never completed; in this sense, it is similar to the case described by Chigira et al., which also showed fusion of C5-6.

The “hemiatlas” perhaps is really an atlas with a midline cleft and a lost half, though the posterior arch does not reach the midline, so it never became fused with the right half of the bone. A secondary posterior ossification centre sometimes appears during the first years of life. In this case, it was absent, in contrast with the anterior secondary ossification centre which was surely present in the former case.

Perhaps familial links existed between the two subjects. Klippel-Feil syndrome is a heterogeneous disorder, showing different alterations in different families. The simultaneous finding of different developmental abnormalities of the atlas in our two cases—assuming that the second one truly represents a case of Klippel-Feil—may either reflect an unusually high prevalence of this entity in the prehispanic population of El Hierro, or may also indicate that even in the same family clinical expression of the Klippel-Feil syndrome is variable.

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Haematopoietic stem cell transplantation (HSCT) in a patient with Sjögren’s syndrome and lung mull lymphoma cured lymphoma not the autoimmune disease

Haematopoietic stem cell transplantation (HSCT) has been used in an attempt to control autoimmune diseases that respond poorly to conventional treatment, or as a way
Table 1 | Lymphoma characteristics, conditioning regimens, side effects and outcome of the two female patients so far studied, after haematopoietic stem cell transplantation

<table>
<thead>
<tr>
<th>Variables</th>
<th>Patient 1</th>
<th>Patient 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>57</td>
<td>34</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>NHL* of the lung (large cells MAL T* lymphoma)</td>
<td>Immunoablative B lymphoma</td>
</tr>
<tr>
<td>First line treatment</td>
<td>6 cycles of F-MACHOP (vincristine 0.5 mg/m² at hours 0 and 12; cyclophosphamide 800 mg/m² intravenous (IV) bolus at hour 36, 5-fluorouracil 15 mg/kg IV for six hours at hour 36, cytotoxic-arabinoside 1000 mg/m² IV for six hours at hour 42, doxorubicin 60 mg/m² IV bolus at hour 48, methotrexate 500 mg/m² IV for six hours at hour 60, prednisone 60 mg/m² from day 1 to 14), and follicin rescue (20 mg/m² IV bolus at hours 84, 96, 108, 120), with a prompt reduction of hilar adenopathies and a net decrease of pulmonary nodule size. However, no complete remission was recorded. She was then offered the possible chance of an HSCT. This report (patient 1) reports the myeloablation, conditioning, recovery, and reinfection of stem cells. After three years of follow up no relapse of the lymphoma has occurred. Sica syndrome after transplantation was unmodified, however, with a persistently poor function of the salivary glands, an unchanged serology (anitnuclear antibody titre 1/2560), and an unchanged histopathology (Chisholm-Mason grading = 4) despite having mild fibrosis of the salivary glands.</td>
<td>Immunoablative B lymphoma</td>
</tr>
<tr>
<td>Conditioning regimens</td>
<td>ARA-C* 200 mg x 2/day x 4 VCOP-B* 6 cycles of F-MACHOP (vincristine 0.5 mg/m² at hours 0 and 12; cyclophosphamide 800 mg/m² intravenous (IV) bolus at hour 36, 5-fluorouracil 15 mg/kg IV for six hours at hour 36, cytotoxic-arabinoside 1000 mg/m² IV for six hours at hour 42, doxorubicin 60 mg/m² IV bolus at hour 48, methotrexate 500 mg/m² IV for six hours at hour 60, prednisone 60 mg/m² from day 1 to 14), and follicin rescue (20 mg/m² IV bolus at hours 84, 96, 108, 120), with a prompt reduction of hilar adenopathies and a net decrease of pulmonary nodule size. However, no complete remission was recorded. She was then offered the possible chance of an HSCT. This report (patient 1) reports the myeloablation, conditioning, recovery, and reinfection of stem cells. After three years of follow up no relapse of the lymphoma has occurred. Sica syndrome after transplantation was unmodified, however, with a persistently poor function of the salivary glands, an unchanged serology (anitnuclear antibody titre 1/2560), and an unchanged histopathology (Chisholm-Mason grading = 4) despite having mild fibrosis of the salivary glands.</td>
<td>Immunoablative B lymphoma</td>
</tr>
<tr>
<td>Reinfusion</td>
<td>BCNU* 200 mg</td>
<td>BCNU 300 mg/m³</td>
</tr>
<tr>
<td>MNC* 4.5 x 10⁶/kg</td>
<td>CYTAX 1500 mg/m³</td>
<td>Etoposide 800 mg/m³</td>
</tr>
<tr>
<td>CD14 0.9 x 10⁹/kg</td>
<td>MNC 2.42 ± 10⁹/kg</td>
<td>Cytarabine 1600 mg/m³</td>
</tr>
<tr>
<td>CD3 1.0 x 10⁶/kg</td>
<td>MNC 3.70 ± 10⁹/kg</td>
<td>Melphalan 140 mg/m³</td>
</tr>
<tr>
<td>Days to PMN* &gt;1 x 10⁹/kg</td>
<td>Days to PMN &gt;10 x 10⁹/kg</td>
<td>MNC 2.42 ± 10⁹/kg</td>
</tr>
<tr>
<td>Days to PMN* &gt;10 x 10⁹/kg</td>
<td>Days to PMN &gt;10 x 10⁹/kg</td>
<td>MNC 3.70 ± 10⁹/kg</td>
</tr>
<tr>
<td>Literature on outcomes</td>
<td>No remission of autoimmune disease</td>
<td>No remission of autoimmune disease</td>
</tr>
<tr>
<td>Sides effects/outcomes</td>
<td>Alive in complete continuous lymphoma remission after 3 years</td>
<td>Died 20 months after transplantation for Pneumocystis carinii pneumonia</td>
</tr>
</tbody>
</table>

*NHL* = non-Hodgkin's lymphoma; MAL T* = malaosa associated lymphoid tissue; F-MACHOP: F = 5-fluorouracil, M = methotrexate, A = Adriamycin, C = cyclophosphamide, H = doxorubicin, O = Oncovin, P = prednisone; ARA-C = arabinoside-C; VP16 = etoposide; CTX = cyclophosphamide; BCNU = carmustine; MNC = monoclonal cells; PMN = polymorphonuclear cells; Plt = platelets; VCOP-B: V = Vepesid, A = Adriamycin, C = cyclophosphamide, O = vincristine, P = prednisone, B = bleomycin; VIPE: V = vinblastine, I = ifosfamide, P = prednisone, E = etoposide.

Table 2 | Report of the European group on the three major rheumatological autoimmune diseases treated with autologous stem cell transplantation

<table>
<thead>
<tr>
<th>Autoimmune disease</th>
<th>Number</th>
<th>Died (No (%))</th>
<th>Transplant related death (No (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemic sclerosis</td>
<td>33</td>
<td>13 (39)</td>
<td>9 (27)</td>
</tr>
<tr>
<td>SLE</td>
<td>14</td>
<td>2 (14)</td>
<td>2 (14)</td>
</tr>
<tr>
<td>RA</td>
<td>35</td>
<td>1 (3)</td>
<td>1 (3)</td>
</tr>
<tr>
<td>Sjögren’s syndrome</td>
<td>2</td>
<td>1 (50)</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>17 (20)</td>
<td>12 (14)</td>
</tr>
</tbody>
</table>

Table 2 shows the results for patients with three more common autoimmune rheumatic diseases (rheumatoid arthritis (RA), systemic lupus erythematous (SLE), and scleroderma (SSc)) treated with HSCT and who received an adequate follow up. A total of 270 such patients are registered so far in the European Bone Marrow Transplant/EULAR database, but the number who have received adequate follow up is much smaller.

Current data suggest that best results have been obtained in RA, the worst in SSc, suggesting that T helper 2 oriented diseases have a poorer response. Results for SS seem to confirm this because HSCT cured lymphoma but did not improve the autoimmune disease. No changes were recorded in the function of salivary glands, or in the synthesis of ANA, or the histopathology. The other case report did show some early improvement. An immunological reassessment showed persistence of the immunological imbalance and poor function of the salivary apparatus.

In table 1 we give the characteristics of the other patient with primary SS (No 2), previously reported. It can be seen that the conditioning regimen, previous treatment, stem cell rescue, and bone marrow reconstitution were different. However, in this case, also, SS was not cured and there was no remission. An immunological reassessment showed persistence of the immunological imbalance and poor function of the salivary apparatus.

We gratefully acknowledge the invaluable help we received from Professor A Tyndall, who provided us with the latest data available of the EBMT/EULAR registry on haematopoietic stem cell transplantation in autoimmune diseases.

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Castleman’s disease

A 65 year old woman presented in February 1998 with joint pains, mild weight loss, and a low grade irregular fever. Initially, pain was localised around both shoulder joints. Subsequently, elbows, wrists, hips, and knees were affected, with morning stiffness, but without parturation. The symptoms were accentuated by movement, but also persisted during the night, often keeping the patient awake. On clinical examination, there was limited painful movement of the shoulders and hips with a marked reduction in strength. The small joints of the hands and feet were not affected. No other pathological conditions were found. Laboratory findings showed a marked rise in erythrocyte sedimentation rate (ESR, >100 mm/1st h), hyper-B, globulinaemia and a mild anaemia, whereas enzymatic activity (serum aspartate aminotransferase, serum alanine aminotransferase, alkaline phosphatase, lactate dehydrogenase, and creatine kinase) was within the normal range. A diagnosis of polymyalgia rheumatica was made and a rapid and marked clinical improvement was obtained with low dose steroid treatment (prednisone 12.5 mg/day). Pain disappeared, muscle strength and joint function became normal within a week. A decrease in ESR (to 40 mm/1st h) and a, globulinaemia was noted and maintained. The clinical condition remained satisfactory during 1998, with a complete normalisation of ESR and a, globulinaemia after three months.

In January 1999 she developed jaundice with pruritus and a subcontinuous fever (38.5–39°C). Axial tomography and nuclear magnetic resonance disclosed compression of the biliary duct by a compact, well defined retropancreatic mass (about 4 cm in diameter). The laboratory pattern was typical of endo-cholestasis (hyperbilirubinaemia, increased alkaline phosphatase, serum aminotransferases and aminotransferases, serum aspartate aminotransferase, serum alanine aminotransferase, alkaline phosphatase, lactate dehydrogenase, and creatine kinase) was within the normal range. A diagnosis of Castleman’s disease and autoimmune idiopathic polymyalgia rheumatica was suggested, and treatment with prednisone 60 mg/day was started.

Exploratory laparotomy confirmed the presence of a mass compressing the common bile duct. This was removed and histological examination disclosed a lymph nodal archi- tecture characterised by evident follicular hyperplasia. Some of the germinal centres were depleted and comprised polymorphous follicular centre cells, whereas other germinal centres were depleted of lymphocytes, and consisted predominantly of dendritic reticular cells showing vascular proliferation. The mantle zone was expanded and concentri- cally arranged around the atrophic germinal centres (onion skin layers). The interfollicular areas were also prominent, containing small lymphocytes, occasional eosinophils, plasma cells, and some immunoblasts, and showing numerous hyperplastic vessels of the post- capillary venous type. Occasionally these ves- sels, which were often hyalinised, penetrated the expanded follicles perpendicularly, giving rise to the so-called “lollipop” appearance (fig 1). An immunocytochemical study con- firmed the normal organisation of the nodal structures, with a clear positivity of follicular elements for typical B cell markers CD20 and CD79a, and positivity of interfollicular lympho- phoid elements for T cell markers CD3 and CD45RO, whereas the dendritic reticular cells showed a typical positivity for CD21.

These features are distinctive of Castle- man’s disease, also known by the descriptive term angiofollicular lymph node hyperplasia. This is a clinical entity characterised by angiofollicular hyperplasia of the lymph nodes without the presence of any atypical cells or other signs of malignancy. Many (multicentric or systemic form) or single (monocentric or solitary form) lymph nodal groups can be affected in the process and two histological subsets have been recognised: a haemangio-vascular type, characterised by marked expansion of the mantle follicular zone and a plasma cell type, with diffuse plasma cell proliferation in the interfollicular tissue. The cause of the disease is unknown, but overproduction of interleukin 6 has been shown in the course of Castleman’s disease and a possible pathogenic role for this cytokine has been suggested. It is commonly associated with several autoimmune condi- tions such as systemic lupus erythematosus, Behçet’s disease, amyloidosis, and with vari- ous neoplastic diseases, but its onset during the course of polyomylgia rheumatica has not been recently reported. No data exist about the possible relation between Castleman’s disease and polyomylgia, but a role for interleukin 6 can be suggested, perhaps through a stimulating action of this cytokine on monocytes and lymphocytes. The present case can be considered typical of the solitary form, hyaline-vascular type of Castleman’s disease. Our patient did not present any other lymphatic disease during the subsequent months, which would seem to confirm the good prognosis of this disease.

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