Cold abscess of cervical Lymphnode? TB disease? vaccine induced

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**Introduction:**
Children are more prone to develop Tuberculous (TB) lymphadenitis especially neck nodes. This is the most common presentation of Childhood TB, either pulmonary or Extrapulmonary infection (Fanning 1999) (Vimlesh Seth 2013)

Bacillus Calmette Guerin (BCG) vaccine is a time tested safe vaccine. (Goraya JS 2002) Few vaccine related complications are reported which depend on the strain, dose of BCG vaccine, technique of administration, age and innate immunity of the child. (Banani SA 1994)

A child who had cold abscess in the neck, probably a complication of BCG vaccine is reported.

1 Year 10 Months old female child presented to the OPD with a swelling over left side of neck of 2 months duration. Initially there was fever, cough and cold for 2 – 3 days which was treated. After 4 days a small neck swelling was noticed by the mother. It increased to the present size insidiously. The child was given full course of three different antibiotics with no response.

Clinical examination revealed the following:
1. Birth Weight 2.8 Kg
2. Present Weight 11 Kg
3. IAP Nutritional Status - Normal.
4. BCG vaccine was given at the age of 5 months. There was no history of infection at vaccine site.
5. BCG scar seen.

**Relevant History:**
1. History of recurrent respiratory infections since 8 months of age.
2. One five year old male elder sibling - normal
3. Both Parents were normal.
4. One adult male in the neighbourhood has chronic cough and the child used to play in that house.
5. Child was anemic.

**Examination of Neck:**

**Left:**
Multiple small discrete lymphnodes were palpable at anterolateral, posterior triangle and submandibular region. One node in the anterior triangle was globular, size about 3 cm x 2 cm with cystic and soft consistency, freely mobile. No warmth or tenderness. This node fitted into stage 3 of TB lymphadenitis scoring by Jones and campbell (Vimlesh Seth 2013)

**Right:**
Tiny discrete lymph nodes were palpable two in posterior and two in anterior triangle. Clinically not significant.

**Diagnostic possibilities**
1) Pyogenic Abscess
2) Tuberculous adenitis with abscess
3) BCG adenitis with abscess.

**Investigations:**
1. Total Count – 16,100 Cells / Cumm
2. Differential Count P55%, L36 E8% M1%
3. ESR ½ hour 35mm, 1 hour 80mm
4. Hb% 10.3 G%
5. P.S - Normocytic Hypochromic anemia.
6. CRP - .7 mg / dl – Negative
7. Mantoux Test – Negative
8. FNAC – revealed accumulation of acute inflammatory cells and granuloma in a caseous background suggestive of cold abscess of TB lymphadenitis.
9. HIV – I & II Immunochromotography – Negative

The child underwent incision drainage and curettage by which about 3ml of thick pus could be obtained.

**Investigations in the Pus:**
1. AFB Stain Negative
2. Pyogenic culture – No growth after ten days including two sub cultures.
3. Qualitative TB PCR for MTB complex – Positive. This complex includes M.Tuberculosis, M.bovis, M.bovis BCG Strain, M.africans, M.canetti and M.Microti
4. Whole Blood TB nested PCR – Negative
5. AFB culture of pus was not done.
Based on clinical and laboratory evidence cold abscess of left side neck was diagnosed.

**Evidence for Mycobacteria Tuberculous Infection:**
1. Recurrent Respiratory infection
2. Neighbourhood Contact.
3. Clinical and cytology findings.
4. MTB complex detected.

**Evidence not in favour of Mycobacterium TB**
1. BCG given
2. Nutritionaly Normal
3. MX Negative
4. No other system revealed and evidence of TB

**Evidence in favour of BCG Cold Abscess:**
1. BCG given
2. Cold abscess was in anterior triangle.
3. MTB complex includes M.bovis BCG Strain.
4. No other system revealed and evidence of TB

**Treatment given:**
1. After surgical procedure a course of antibiotic was given
2. One full course of ATT for Extra pulmonary TB was given.
3. Iron, folic acid and vitamin suplementations given.
4. Nutritional advice was given.

**Follow Up:**
1. Child was followed up every month for One year
2. CRP, ESR and Hb were normal after three months.
3. The incision scar healed completely in three weeks.
4. There was no sinus formation even after one year follow.

**Discussion:**
Lymphadenitis, mostly cervical is the common form of extra pulmonary TB in children. The prevalence varies from 30 – 40%. In rural India it is 4.4 per 1000 children (Vimlesh Seth 2013)

Regional Lymphadenitis and or cold abscess can result in 3.3% patients after about 6 – 9 months of vaccination. It can simulate pyogenic abscess. (Abqari.s 2013) as in this case.

Histopathology of FNAC is diagnostic (Vimlesh Seth 2013). In this child FNAC and PCR of Pus were done for diagnosis.

Suggested management includes 1) aspiration 2) Incision, Drainage and curettage 3) Excision of the node (Vimlesh Seth 2013)

If the Pus in Lymphnode abscess reveals vaccine bacilli alone no need for Anti Tuberculous Therapy (ATT) (IAP guide book of immunizations 2014)

If FNAC is suggestive or Pus reveals Mycobacterium tuberculosis full course of ATT is mandatory (Vimlesh Seth 2013)

Since the PCR of pus revealed Mycobacterium TB Complex and history of recurrent respiratory infection with doubtful contact history ATT was initiated.

AFB culture of the pus would have given the confirmed microbiological diagnosis. It was not possible because only 3ml of Pus could be aspirated and it was utilised for other investigation.

**Conclusion:**

Non resolving soft tissue swelling in a young child can be cold abscess following either TB or BCG vaccination. Child needs thorough investigation and evidence based management.

**REFERENCES:**
1. S.Abqari (2013), A.Anjum DI Khan et al; Tubercular cold abscess at an unusual site mimicking pyogenic abscess: S.Afr.J.CH : Vol 7: No 277 – 78