Management of Bacillus Calmette-Guérin Lymphadenitis

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Abstract

Bacillus Calmette-Guérin (BCG) related regional lymphadenitis is not an uncommon complication following BCG vaccination. We present a case series of 11 infants with suppurative BCG lymphadenitis managed in Hospital Authority Infectious Disease Centre of Hong Kong over a 5-year period. All of them presented with isolated left axillary mass which suppurated at a mean of 3.5 months (range 2 to 5 months) after BCG vaccination. The diagnosis of the condition is basically clinical. Five infants who were initially managed with needle aspiration alone showed significant regression in the sizes of their enlarged lymph nodes and surgical excision was spared. Surgical incision and drainage was performed in 5 other infants prior to referral to our centre. They all developed significant irregular scarring and 2 eventually developed keloids over their scars upon healing. We recommend that suppurative BCG lymphadenitis should be managed initially by needle aspiration. Total excision should be considered if aspiration fails or suppuration recurs despite repeated needle aspiration. Incision and drainage is mentioned to be condemned.

Key words

Bacillus Calmette-Guérin (BCG); Lymphadenitis; Management

Introduction

The live attenuated Bacillus Calmette-Guérin (BCG) vaccine is the oldest vaccine that continues to be widely used nowadays. It is derived by in vitro attenuation of an isolate of *Mycobacterium bovis* specially cultured in an artificial medium for years and named after its discoverers, the French bacteriologist Albert Calmette and veterinarian Camille Guérin. The product was subsequently distributed to many laboratories, which continue to propagate the vaccine strain under different conditions. The marketed strains of BCG from different pharmaceutical companies are now bacteriologically different.

BCG was first used in humans to prevent tuberculosis (TB) since 1921. It is now used worldwide in childhood immunisation programmes. It helps to protect vaccinees, especially infants and children, against disseminated TB and tuberculous meningitis, with an estimated efficacy of 78% and 64%, respectively. The efficacy for protection against pulmonary tuberculosis in adults and children remains unclear. However, BCG still is one of the most cost-effective vaccines, which only costs about HK$1,600 per life-year gained. In Hong Kong, the universal neonatal BCG immunisation programme was introduced since April 1952, which dovetailed a declining TB notification rate from 697.2 per 100,000 population in that year to 76.36 per 100,000 population (provisional figure) in the year 2009. Neonatal BCG vaccination coverage in Hong Kong has been persistently around 99% since 1980.
Complications from BCG Vaccination

BCG vaccine is considered to be safe and has a low incidence of serious adverse reactions.6,7 The most common complications after receiving BCG are local reactions and regional lymphadenopathy.8-10 The local reactions at the inoculation site can range from erythema and induration, to the formation of papule, discharging ulcer or abscess. Regional lymphadenopathy arises as a result of enlargement of ipsilateral lymph nodes, principally involving the axillary, and rarely, the lower cervical chain. The higher the BCG injection site above the insertion of the tendon of the deltoid muscle, the higher the likelihood of cervical lymphadenopathy, if regional complication does occur. Serious complications such as regional or distant soft tissue granulomas, osteomyelitis and disseminated disease (disseminated BCGosis) are rare, which mainly affect patients with impaired immunity, like those with acquired immunodeficiency syndrome (AIDS) or primary immunodeficiencies.11-13 However, similar complications can rarely occur in previously healthy or immunocompetent individuals. Notwithstanding, further investigations for an underlying aetiology or immune defect is warranted whenever serious complications develop after BCG vaccination.

BCG Lymphadenitis

Regional lymph node enlargement after BCG vaccination generally undergoes spontaneous resolution but may occasionally progress slowly to become suppurative.13,14 This is a continuous spectrum of lymph node reactions and there is no specific guideline or recommendation to clearly define and differentiate normal from abnormal. The term "BCG lymphadenitis" is usually coined when ipsilateral axillary, supraclavicular or lower cervical lymph node enlargement developing after BCG vaccination is severe enough to arouse significant concern from the child care provider to seek medical attention.14

Types of BCG Lymphadenitis

There are two forms of BCG lymphadenitis.15,16 The non-suppurative form (simple form) is characterised by a benign clinical course and the lesion resolves spontaneously without any sequelae over a period of weeks17 (Figures 1a & 1b). The suppurative form is marked by the progressive enlargement of regional lymph nodes leading to a collection of suppurative material, with recognisable fluctuation in the swelling. Overlying skin changes is universal, with

Figure 1  Two views of non-suppurative BCG lymphadenitis in an infant.
erythema, edema, increased pigmentation and pustule formation (Figures 2a & 2b). If left untreated, the suppuration will eventually rupture, leading to persistent caseous discharge and sinus formation (Figure 3). Wound healing inevitably takes several months, which is unpleasant to both patients and their care providers. Frequent and meticulous wound dressing is required, and secondary bacterial infection, unsightly scarring or keloid formation are not uncommon sequela.e.

**Case Series**

Infants suffering from BCG lymphadenitis are commonly referred to the Hospital Authority Infectious Disease Centre of Hong Kong for further evaluation. We present an illustrative case series to describe the characteristics and outcome of infants affected by the condition who were managed in our centre over a 5-year period. This is followed by a review of the risk factors for development of the disease entity, clinical features and approach to its proper management.

Table 1 summarises our recent experience in the management of 11 infants who presented with suppurative BCG lymphadenitis from January 2006 to December 2010. Seven of them were male infants (male to female ratio of 1.75 to 1). All of them had received BCG vaccination (9 at birth, 1 at 2 months and 1 at 11 months of age) and presented with isolated left axillary mass which later suppurated as the only abnormal physical finding at a mean of 3.5 months (range 2 to 5 months) after vaccination. All were thriving well and none of them developed fever or constitutional symptoms. Tuberculin skin tests were performed in 7 of them using 2 units of tuberculin (PPD-RT23) administered by the Mantoux method. Six were positive (≥10 mm
**Table 1** Characteristics and outcome of 11 infants with suppurative BCG lymphadenitis

<table>
<thead>
<tr>
<th>Case</th>
<th>Sex</th>
<th>DOB</th>
<th>Age at presentation (months)</th>
<th>Duration after vaccination (months)</th>
<th>Size of left axillary LN at presentation (cm)</th>
<th>Max size of fluctuation (cm)</th>
<th>Appearance of BCG injection site at presentation</th>
<th>Mantoux test (2 units)</th>
<th>CXR</th>
<th>Bacteriologic investigation of LN content</th>
<th>LN content</th>
<th>Management</th>
<th>Wound care</th>
<th>Outcome at latest follow-up by end of Dec 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F</td>
<td>Nov 05</td>
<td>2</td>
<td>2</td>
<td>3 x 1.5</td>
<td>4 x 5</td>
<td>Normal scar</td>
<td>N/A</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>I&amp;D &amp; D</td>
<td>Daily wound toilet and dressing until complete wound healing</td>
<td>Wound healed with irregular scar and 1 cm keloid in 4 months</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>Dec 08</td>
<td>2</td>
<td>2</td>
<td>3 x 1.5</td>
<td>2 x 1</td>
<td>Normal scar</td>
<td>13 mm</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>I&amp;D &amp; D</td>
<td>None</td>
<td>Wound healed with irregular scar in 3 months and 1 cm keloid in 4 months</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>Nov 08</td>
<td>3</td>
<td>3</td>
<td>2.5 x 2.5</td>
<td>2 x 1</td>
<td>Normal scar</td>
<td>21 mm</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>I&amp;D &amp; D</td>
<td>None</td>
<td>Wound healed with irregular scar in 4 months</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>Aug 08</td>
<td>3</td>
<td>3</td>
<td>1.5 x 1.5</td>
<td>1</td>
<td>Normal scar</td>
<td>23 mm</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>I&amp;D &amp; D</td>
<td>None</td>
<td>Wound healed with irregular scar in 3 months and 1 cm keloid in 4 months</td>
</tr>
<tr>
<td>5</td>
<td>M</td>
<td>Jul 08</td>
<td>5</td>
<td>5</td>
<td>1.5 x 1.5</td>
<td>1</td>
<td>Normal scar</td>
<td>19 mm</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>I&amp;D &amp; D</td>
<td>None</td>
<td>Wound healed with irregular scar in 4 months</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
<td>Aug 09</td>
<td>5</td>
<td>5</td>
<td>2 x 1</td>
<td>2 x 2</td>
<td>Normal scar</td>
<td>9 mm</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>I&amp;D &amp; D</td>
<td>None</td>
<td>Wound healed at 2 cm irregular scar in 3 months</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>Sep 09</td>
<td>4</td>
<td>4</td>
<td>1 x 2</td>
<td>1</td>
<td>Scabbed</td>
<td>30 mm</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>Needle aspiration</td>
<td>None</td>
<td>Complete resolution in 0.5 month, Spontaneous rupture of adjacent LN which resolved in 2 weeks</td>
</tr>
<tr>
<td>8</td>
<td>M</td>
<td>Dec 09</td>
<td>5</td>
<td>5</td>
<td>3 x 4</td>
<td>2.5 x 2.5</td>
<td>Normal scar</td>
<td>N/A</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>Needle aspiration</td>
<td>None</td>
<td>LN almost completely resolved (0.2 cm at 5 months)</td>
</tr>
<tr>
<td>9</td>
<td>M</td>
<td>Feb 09</td>
<td>13</td>
<td>4</td>
<td>1.5</td>
<td>2 x 1.5</td>
<td>Normal scar</td>
<td>10 mm</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>Needle aspiration</td>
<td>None</td>
<td>LN resolving (0.4 cm at 3 months)</td>
</tr>
<tr>
<td>10</td>
<td>F</td>
<td>Apr 10</td>
<td>4</td>
<td>4</td>
<td>1.5</td>
<td>1.5 x 1.5</td>
<td>Normal scar</td>
<td>N/A</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>Needle aspiration</td>
<td>None</td>
<td>Wound healed in 2 weeks with 3 mm depressed scar, LN resolved in 4 months</td>
</tr>
<tr>
<td>11</td>
<td>F</td>
<td>May 09</td>
<td>5</td>
<td>5</td>
<td>1.5 x 1.5</td>
<td>2.4 x 1.8</td>
<td>Normal scar</td>
<td>N/A</td>
<td>Normal</td>
<td>M. bovis isolated by referring doctor</td>
<td>Culture isolated</td>
<td>Needle aspiration</td>
<td>None</td>
<td>Wound healed with irregular scar and 1 cm keloid in 4 months</td>
</tr>
</tbody>
</table>

CXR: chest radiograph; I&D: incision and drainage; LN: lymph node; N/A: not recorded or not available; PCR: polymerase chain reaction
induration at 48 to 72 hours after intradermal injection) and the remaining one had an induration of 9 mm. None had abnormal findings on chest radiographs. Bacteriologic investigations were performed in 9 infants. *Mycobacterium bovis* (BCG strain) was isolated from culture of the needle aspirates obtained from the enlarged suppurative axillary lymph nodes of 5 infants. Three of 5 infants who had incision and drainage performed (Cases 1-4 prior to referral to our care and Case 5 after failed needle aspiration) were also culture-positive for BCG. Of the remaining 2 patients, 1 was culture-negative (Case 3) and the other (Case 4) was not subjected to microbiologic investigations by the referring doctor. One infant (Case 11) had spontaneous rupture with minimal discharge of the axillary lymph node 1 month after presentation.

Needle aspirations were attempted in 6 infants (Cases 5-10). One of them (Case 5) failed the attempt (dry tap) and subsequently underwent incision and drainage twice despite our referral for surgical excision. Wound healing took 3 months in this infant and was not satisfactory as he developed a 2 cm irregular scar. All 5 infants who were initially managed with successful needle aspiration alone showed significant regression in the sizes of their axillary lymph nodes after the procedure. Two infants with the lymph node sizes of 1-2 cm resolved completely over 2 to 4 weeks (Cases 6-7). However, enlargement of adjacent solitary lymph nodes occurred about 1 month after needle aspiration and spontaneous rupture ensued before the infants returned for follow-up. Despite this apparent failure of hastening recovery with needle aspiration, the discharge from the subsequently enlarging adjacent lymph nodes was minimal, requiring only simple dressing, and stopped spontaneously, one after 2 weeks and the other 4 weeks. The other 3 patients (Cases 8-10) had regression of lymph node size from 2.5 to 0.2 cm (92% reduction), 2 to 0.5 cm (75% reduction), and 1.5 to 0.4 cm (73% reduction) at 5, 6 and 3 months after needle aspiration, respectively, with no further complication or need for surgical intervention up to the time of latest follow-up (Figures 4a & 4b). In summary, five of the 6 infants who were managed initially with needle aspiration were spared surgical excision (Cases 6-10). The remaining one (Case 5) unfortunately was managed with a surgical procedure which was not our intention, resulting in suboptimal wound healing (Figure 5).

Surgical incision and drainage had already been performed in 4 other infants (Cases 1-4) prior to referral to our centre for further management of their persistently discharging wounds, and was also performed in the one
referred for surgical excision after failed needle aspiration in our centre (Case 5). Daily wound toilet and dressing for an extended period in hospital, and then clinic until complete resolution were required. Unfortunately, upon healing all 5 of them developed significant irregular scarring and 2 eventually developed keloids over their scars, with 1 necessitating plastic surgical excision. The mean duration from incision and drainage to complete wound healing and resolution of the lymph node enlargement in these 5 infants who were managed by incision and drainage was 4 months (range 3 to 6 months).

The infant (Case 11) who had spontaneous rupture of the axillary lymph node that suppurated 1 month after presentation only required daily simple dressing. The draining sinus healed after 2 weeks and resolution of the lymphadenitis took 4 months to complete, leaving behind a 3 mm depressed scar. The resolution in this infant was fortunately satisfactory because the discharging content of the suppuration was not copious.

Isolated left supraclavicular lymphadenitis occurred in 1 infant (Case 2) 4 months after BCG vaccination, shortly after resolution of the axillary lymphadenitis. Unfortunately, incision and drainage was performed by surgeon and the wound took 4 more months to heal. Immune function tests performed in this patient were normal.

**Review of BCG Lymphadenitis**

The risk factors associated with BCG lymphadenitis can be either host-related or vaccine-related.

(A) Host-related factors:
1. Age. Vaccine given during the neonatal period is associated with a higher risk of regional lymphadenitis.
2. Immunocompetence. Immunocompromised patients such as those suffering from severe combined immunodeficiency or AIDS have increased complication rates of local as well as disseminated BCG infections.
3. Route of administration. Failure of intradermal injection may result in inadvertent subcutaneous administration, which contributes to increased complication rate.
4. Race. A wide variation in the incidence of BCG-related complications has been reported in different countries and ethnic groups.

(B) Vaccine-related factors:
1. Dosage of BCG vaccine. Overdosage may lead to more severe adverse reactions.
2. Residual virulence of the BCG strain. BCG strains from different pharmaceutical manufacturers are known to have different reactogenicity.
3. Viability of final vaccine product (the relative proportions of living and dead bacilli). This is related to the quality of the administered vaccine and is affected by storage conditions such as the cold chain.

**Clinical Features**

A detailed and accurate documentation of the symptoms and signs is imperative for making the proper diagnosis. Sometimes, it may be difficult to differentiate BCG-related reaction from lymphadenitis or abscess formation secondary to acute pyogenic bacterial infection, or rarely, chronic tuberculous or non-tuberculous mycobacterial infection, although in general the latter two conditions are more "cold" than "hot" in presentation i.e. the classical TB or non-tuberculous mycobacterial (caused by rapid growers such as *Mycobacterium chelonae*) lymph node or soft tissue abscess is a cold abscess. The following features should lead to the suspicion of BCG as the aetiology:

1. History of BCG vaccination on the ipsilateral arm.
2. Onset is usually 2 to 4 months after BCG vaccination, although it may range from 2 weeks to 6 months. Almost all cases occur within 24 months.
3. There is absence of fever or other constitutional symptoms.
4. Absent or minimal local tenderness over the lesion(s).
5. >95% of cases involve ipsilateral axillary lymph nodes, but supraclavicular or cervical glands may be involved in isolation or in association with axillary lymphadenopathy.
6. Only 1 to 2 discrete lymph nodes are enlarged (clinically palpable) in the majority of cases. Involved lymph nodes are rarely matted together.

**Diagnosis**

The diagnosis of BCG lymphadenitis is basically clinical. The patient must have a history of recent BCG vaccination that should normally be at birth in Hong Kong, so the commonest age of presentation is from 2 to 4 months of age, and almost all are diagnosed within the first two years of life. The recognition of characteristic clinical features ipsilateral to the site of BCG vaccination that is not associated with fever or constitutional symptoms, and in the absence of other attributable causes of lymphadenitis, can usually lead to a diagnosis.

Further investigation is of limited value except to exclude disseminated BCG infection in the immunocompromised host, which should have other suggestive clinical signs and symptoms, and superinfection of the involved lymph
node(s) by pyogenic bacteria. Clinically, it can be difficult to differentiate BCG lymphadenitis from tuberculous lymphadenitis notwithstanding the temporal relationship of recent BCG vaccination and the common age of presentation, though isolated tuberculous axillary lymphadenitis is extremely rare. A tuberculin skin test is not useful for making a diagnosis of BCG lymphadenitis with typical presentation. The test is expected to be positive after recent BCG vaccination in immunocompetent host so it cannot help to differentiate reaction caused by *M. bovis* or *M. tuberculosis*. A positive tuberculin skin test and, if available, supplemented by a negative interferon-gamma release assay (IGRA) for *M. tuberculosis*, together with a normal chest radiograph (CXR) might help in diagnosis by excluding TB in the rare situation of BCG lymphadenitis presenting atypically as an isolated left cervical mass without concomitant axillary involvement. However, information on the negative predictive value of IGRA and its utility in infants to exclude infection by *M. tuberculosis* remains controversial, and over-reliance on the test in this young age group is discouraged. The absence of any reaction to the tuberculin skin test in an infant presenting with axillary and/or cervical lymphadenopathy who has received BCG vaccination and is not thriving should prompt further investigation for the possibility of primary immunodeficiency. CXR examination is the bare minimum that one should perform in all cases. It should be normal in an infant with localised BCG lymphadenitis. Any abnormal pulmonary infiltrates or opacities suggestive of intrathoracic lymph node enlargement should prompt further investigation to exclude tuberculosis or disseminated BCG infection.

Acid fast bacilli (AFB) may be seen on microscopy of any discharge or aspirate from the suppurative lymph node. A positive *M. bovis* culture can confirm the diagnosis of BCG lymphadenitis. However, a negative mycobacterial culture, or even a positive culture of pyogenic bacteria, cannot exclude BCG as the underlying cause because viable *M. bovis* may not be isolated, and secondary bacterial infection can superimpose on BCG lymphadenitis. The definitive identification of BCG isolated by appropriate culture requires phage typing or mycobacterial gene analysis. The conventional polymerase chain reaction (PCR) test for *M. tuberculosis* complex is not specific enough to differentiate *M. bovis* from *M. tuberculosis*.

**Treatment**

Three treatment options have been described for BCG lymphadenitis.

(A) **Antibiotic Therapy**

Several antibiotics (e.g. erythromycin) and antituberculous medications (e.g. isoniazid and rifampicin) have been used. There are case series suggesting their efficacy. Well controlled trials involving more subjects have shown that these drugs cannot prevent suppuration nor shorten the duration of healing. It should also be noted that BCG is generally not susceptible to pyrazinamide, a first-line agent for treating TB. Antibiotic therapy is, however, often indicated for treatment of suppurative lymphadenitis proven to be caused by superinfection with pyogenic bacteria such as *Staphylococcus aureus* or *Streptococcus pyogenes*, as definitive therapy or an adjunct to surgical intervention.

(B) **Needle Aspiration**

For suppurative BCG lymphadenitis, given time there is almost universal development of spontaneous perforation and sinus formation if left untreated. Recent studies have shown that needle aspiration can help to prevent this complication and shorten the duration of healing, apart from offering valuable diagnostic information. Sometimes repeated aspirations are required for optimal management, and wider-bored needles are preferred for ease of evacuation of thick inflammatory materials. Banani and Alborzi demonstrated in their randomised controlled trial that patients with suppurative BCG lymphadenitis treated with needle aspiration had a significantly higher chance of wound healing without surgical excision (95% vs 68%), and shorter duration of recovery (6.7 weeks vs 11.8 weeks) when compared with the control group. It is considered to be a safer option when compared with total surgical excision, which likely will require general anaesthesia in young infants. Others have advocated the use of local isoniazid instillation therapy during needle aspiration. Whether this offers additional benefit remains to be confirmed.

(C) **Surgical Excision**

Surgical excision is a definitive way to remove the affected lymph node(s) and promote early cure and better wound recovery. However, the patient needs to bear the risks of general anaesthesia in addition to the risks of surgical manipulation, which are considerably higher in infants as compared to older individuals. Surgical excision should be considered as the last resort in case of failed needle aspiration (dry tap or recollection despite repeated aspirations), and in those patients with matted and multiloculated lymph nodes. Simple incision and drainage
is not recommended because it results in persistent discharges requiring cumbersome dressing, inadequate evacuation of inflammatory materials, suboptimal wound healing, scarring and delayed recovery. 33,36,37

Discussion

Our case series suggested that needle aspiration in the management of suppurative BCG lymphadenitis is more likely to result in better cosmetic outcome as compared to incision and drainage in appropriately selected patients. Even if spontaneous rupture ensued in some of our patients who underwent needle aspiration, the duration of wound dressing required appeared to be shorter. No complication was encountered during and after needle aspiration and the procedure was simple and well tolerated. Wound healing following incision and drainage is expected to be unsatisfactory, and resolution is prolonged. Not all suppurative BCG lymphadenitis should be managed by excision, although the procedure itself appears to be an instant cure. Some infants can be spared invasive surgical procedures and an initial less traumatic approach with needle aspiration should be considered. Close monitoring of the infant is warranted after needle aspiration as recollection is not uncommon, necessitating repeated aspiration, and emergence of enlarging adjacent nodes with or without suppuration can occur, which may require early intervention. We suggest that surgeons should reconsider surgical excision as the last resort for definitive treatment of suppurative BCG lymphadenitis. It should preferably be reserved for infants who failed needle aspiration or failed to respond to repeated needle aspirations, after balancing the risks of general anaesthesia and potential surgical complications in very young infants. Incision and drainage should be avoided at all costs due to the risk of resultant persistent draining wound. 36 In addition, delayed wound healing and unsatisfactory scar formation can be problematic. A management algorithm is proposed as in Figure 6.

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**Figure 6** Management algorithm for BCG lymphadenitis.
Good immunisation technique, correct dosage and quality control of the BCG vaccine are presumed to be of paramount importance in avoiding untoward reactions following its administration. To prevent severe local BCG lymphadenitis and more extensive or disseminated BCG infection, avoidance of BCG vaccination in patients with known primary or acquired immunodeficiencies should be seriously considered. However, it is very difficult, if not impossible, to suspect or identify primary immunodeficiency at or soon after birth, unless there is a known family history or the patient presents with features of a known immunodeficiency syndrome (e.g. Di George syndrome). World Health Organization has made human immunodeficiency virus (HIV) infection in infants a contraindication to BCG vaccination in the revised consensus statement of 2008, though information on the risk-benefit ratio, especially in developing countries, is limited and the recommendation may be subject to further debate.13,38,39 We in Hong Kong have adopted the revised WHO recommendation of withholding BCG vaccination in infants known to be HIV positive as well as those born of HIV-infected mothers, pending testing for HIV infection.40

Conclusion

In summary, non-suppurative BCG lymphadenitis is a relatively common benign condition that will regress spontaneously over a matter of weeks to months. Reassurance and masterly inactivity with regular follow-up are all that is required. If the enlarged lymph node progresses to suppuration, then needle aspiration (which can be repeated if necessary) should be performed first in an attempt to hasten resolution by emptying its content, and provide material for appropriate microbiological investigations. Complete surgical excision should be considered for failed needle aspiration or recurrence of suppuration despite repeated aspirations. The addition of antimicrobial therapy is of no proven benefit. Incision and drainage is mentioned to be condemned.

References


