

# Clinical Course Study Post B.C.G Vaccination

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## Abstract

**Background:** The most common complication of post BCG vaccination is lymphadenopathy or lymphadenitis, usually in the neck or the axillary regions. The aim of this study was to evaluate various manifestations of post vaccination adenopathy and the effectiveness of various treatment modalities on them.

**Method:** We studied 82 infants (age range: 2-26 months) within a 2-year period (2000-2002). The subjects were patients who were affected by post BCG vaccination lymphadenitis and subsequently referred to the pediatric infectious disease clinic. The patients were follow up by physical examination on a monthly basis for 6-18 months until the adenopathy disappeared.

**Results:** No specific treatment was provided to 50 patients who had only enlarged cervical and axillar lymph nodes. The lymph nodes had resolved spontaneously within 3- 9 months. In 30 patients, out of the 50 mentioned above, resolution occurred without fistulization. In the remaining 20 patients, resolution of the lymph nodes occurred with fistulization. Six (6) patients with disseminated adenitis required needle aspiration. The lymph nodes in these patients were resolved in 2 months. Oral Erythromycin was administered in 3 patients.

**Conclusion:** Generally, adenitis resulting from post BCG vaccination surgery or needle aspiration needs critical care and adequate patient follow up.

## INTRODUCTION

One of the most common complications of post BCG vaccination is lymphadenitis or lymphadenopathy (1), usually in the neck or the axillary regions. This common complication occurred about 2-6 months after vaccinations. Seldom, the vaccination is followed by diffuse infections (disseminated BCG complications) and multiple lymphadenopathy (2) that warrants diagnostic measures for immunologic (3) problems. The reported incidence is between 1-10% (2,3). The complications usually resolved or fistulized spontaneously without manipulation or surgical interventions (4). This study was conducted to evaluate various manifestations of post vaccination adenopathy and to determine the effectiveness of different treatment modalities.

## METHODOLOGY

Within 2 years, 82 infants ranging in age from 2- 26 months old were studied. They were affected by adenitis or lymphadenopathy following BCG vaccinations. These patients were follow up by physical examinations every months for 6-18 months, until the resolutions of adenitis or

adenopathy without manipulation or surgical intervention.

## RESULTS

Forty-nine (59.7%) female patients and 33 (40.2%) male patients were studied (Table 2). The mean age at first visit for adenitis was 7.5 months old. Fifty (51%) patients had only lymphadenopathy in the neck or the axilla (Table 3), and in this group, no specific treatment was employed and their adenopathy resolved spontaneously within 3-9 months. In 30 (36%) patients, resolutions occurred without fistulization, and in 18 (21.9%) patients, fistulization occurred after 5 months. In 6 (7%) patients with disseminated adenitis, needle aspiration was needed due to growth of adenitis. The lymph node resolved in 2 months. In 3 patients (3.6%), oral erythromycin was administered. This treatment had no significant effect on the outcome. Six patients (7%) with diffuse adenitis or adenopathies were examined by chest X ray, ESR and PCR. These patients were followed for 15-18 months (Table 4). The results of this study showed that in most cases adenopathy or adenitis due to BCG vaccination required adequate follow ups and that

surgical interventions were not necessary.

**Figure 1**

Table 1: Distribution of Cases by Age.

Age(months)	No	Percent%
2-8	39	47.5
8-14	22	26.8
14-20	14	17
20-26	7	8.5
Total	82	100

**Figure 2**

Table 2: Distribution of Cases by Gender.

Sex	No	Percent%
Male	33	40.2
Female	49	59.7
Total	82	100

**Figure 3**

Table 3: Distribution of patients by chief complaints

Group	Chief complaint	No	Percent%
First	Only mass in axilla or neck	50	61
Second	Mass with inflammation(adenitis)	26	31.7
Thurd	Disseminated adenitis	6	7.3
Total	--	82	100

**Figure 4**

Table 4: Mean time of improvement from various types of interventions.

Type of follow up and intervention	No	Mean time well being(months)
Without specific action	50	6
Spontaneous fistulization	15	3
Needle aspiration only one time	6	2
Complete reduction with surgery	6	12-24
Treatment with antibiotic	3	3
Multiple surgical intervention	2	12-18

## DISCUSSION

BCG vaccination is a weakend bovis mycobacterium (live bacilli Calmette-Guerin) which rarely causes disseminated infection or osteitis (4) in immunocompromised patients but still one of the most commonest complications of vaccination is adenitis or lymphadenopathy, especially in the axillary area (5). W.H.O recommended BCG vaccination, in countries with the incidence of TB infection is more than 1% (6,7). The most common complication is a mass with or without inflammation in the axillary area or the neck which is usually asymptomatic and follows a benign course (8). In most cases, no specific measures is required surgically, including manipulation. There is no need to prescribe antibiotics in most cases, since it spontaneously resolved or fistulized (4,9). In cases of large and huge lymphadenopathy or lymphadenitis, which cause problems for patients, needle aspiration is proper and no surgical intervention is needed. In our study, in most cases spontaneous resolution were observed. Those who required needle aspiration showed

prolonged course of improvement. Two patients expired after intervention surgery due to disseminated BCG complications. Every manipulation or surgical intervention should be followed with the administration of antituberculosis drugs (10). In unusually diffused adenopathies or adenitis, the etiology may be due to BCG complications. In these cases, antituberculosis treatment is warranted (11). Therefore, the area of adenitis of the post BCG vaccination must be examined carefully and adequately managed.

## CONCLUSION

Generally, there is no need for surgical intervention or manipulation in adenitis post BCG vaccination. If required, the surgical and aspiration procedures lead to the healing of the adenitis, but could prolonged the duration of improvement. Therefore the area of lymphadenopathy must be adequately managed and the patients closely monitored and followed up carefully.

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