

# Gianotti-Crosti Syndrome following immunization in an 18 months old child

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## ABSTRACT

Gianotti–Crosti syndrome (GCS) is an uncommon dermatological condition characterized by distinct, self-limiting, symmetrical, erythematous, papulovesicular eruptions distributed mainly on the extremities, buttocks and face in young children. Although GCS is commonly attributed to viral infections, vaccinations too can rarely precipitate this condition. We report a rare case of GCS following diphtheria, pertussis, and tetanus (DPT) and oral polio immunisation in an 18-month-old child along with a review of similar vaccine-induced GCS cases reported in the literature.

**Key words:** Gianotti–Crosti syndrome, immunization, infantile, papular acrodermatosis of childhood

## INTRODUCTION

Gianotti–Crosti syndrome (GCS) is a self-limiting dermatosis of unknown etiology affecting children.<sup>[1]</sup> It is characterized by papular eruption with a symmetrical distribution over the limbs and face. GCS was initially believed to be associated exclusively with Hepatitis B infection but later other viruses such as Epstein–Barr virus, hepatitis A, cytomegalovirus, coxsackie, adenovirus, enterovirus, rotavirus, rubella, parainfluenza, HIV, human herpes virus 6, echovirus, parvovirus, mumps, molluscum contagiosum, and respiratory syncytial virus have been implicated as well.<sup>[1,2]</sup> Even bacterial infections due to *Borrelia burgdorferi*, *Bartonella henselae*,  $\beta$ -hemolytic streptococci, and *Mycoplasma pneumoniae*, as well as preceding immunization have been found to be associated with GCS.<sup>[1,2]</sup> We report a case of GCS in an 18-month-old child associated with diphtheria, pertussis, and tetanus (DPT) and oral polio vaccine (OPV) booster vaccination. To our knowledge, this is the first such case reported from India.

## CASE REPORT

An 18-month-old developmentally normal boy presented with generalized itching and symmetrical skin lesions predominantly on the extensor aspect of all four extremities for one week

duration. These lesions developed three days following DPT (*Diphtheria Pertussis Tetanus Vaccine (Adsorbed) IP<sup>®</sup>, Pasteur Institute of India, Kunnur, Tamil Nadu, India*) and OPV (*Oral Polio Vaccine<sup>®</sup>, Bharath Immunologicals and Biologicals, Chola, Bulandshahr, U.P., India*) booster immunization given at one-and-half years as per the National Immunization Schedule. Child started having fever and rashes, while fever subsided after 3 days, rash persisted. There was no history of drug intake or atopy. Lesions started over both upper limbs and progressed to involve the buttocks, lower limbs, and face. On examination, the child had multiple, small, skin-colored papules involving his face, buttocks, upper and lower limbs with minimal involvement of the trunk [Figures 1 and 2]. The papules were nontender, but pruritic. Child also had generalized lymphadenopathy involving cervical, axillary, and inguinal lymph nodes. The lymph nodes were small (<1 cm), nontender, firm, and mobile. Vitals and systemic examination were unremarkable. Blood counts, biochemical profile, and serology for Hepatitis B, C, and Epstein–Barr

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**Table 1: Characteristics of vaccine-associated GCS cases reported in literature**

Authors	Age	Country	Year	Vaccine	Virus associated
Index case	18 months	India	2013	DPT and OPV	None
Kolivas <i>et al.</i> <sup>[3]</sup>	18 months	Belgium	2008	Hepatitis A	None
Kang <i>et al.</i> <sup>[1]</sup>	3 years	Korea	2003	Japanese encephalitis	None
Andiran <i>et al.</i> <sup>[4]</sup>	11 months	Turkey	2002	Measles and Hepatitis B	None
Velangi <i>et al.</i> <sup>[5]</sup>	15 months	UK	1998	MMR	None
Lacour <i>et al.</i> <sup>[6]</sup>	5 years	Switzerland	1995	MMR	Epstein-Barr virus
Baldari <i>et al.</i> <sup>[2]</sup>	12-15 months (5 cases)	Italy	1994	DPT and OPV	Epstein-Barr virus
Retrouvey <i>et al.</i> <sup>[7]</sup>	19 months	USA	2012	DPT and Varicella	None
Erkek <i>et al.</i> <sup>[8]</sup>	18 months	Turkey	2001	OPV	Varicella infection
Monastirli <i>et al.</i> <sup>[9]</sup>	3 years	Greece	2007	Hepatitis A	None

GCS: Gianotti-Crosti syndrome, DPT: Diphtheria, pertussis, and tetanus, OPV: Oral polio vaccine



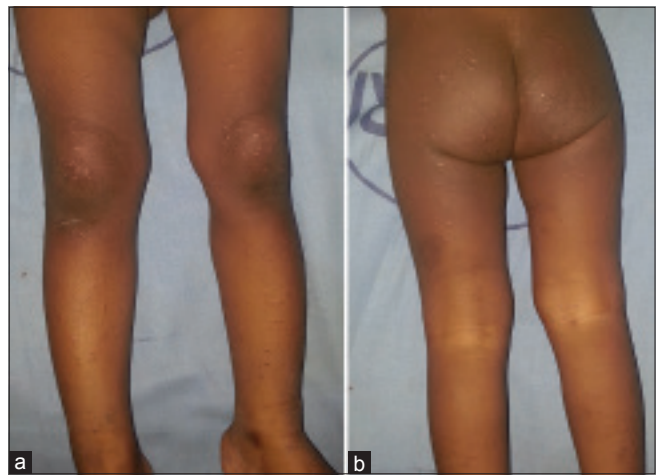
**Figure 1:** (a) Symmetrically distributed papules on the forehead and cheeks (b) Papules on the extensor aspect of upper limb

virus were within normal limits. A diagnosis of Gianotti–Crosti syndrome (Papular acrodermatitis of childhood) was considered based on the characteristic morphology of the lesions. The child was managed symptomatically with antihistaminic syrup. Skin lesions and lymphadenopathy completely disappeared after two weeks.

## DISCUSSION

GCS was initially described by Gianotti and Crosti in 1955 who named it as “Papular acrodermatitis of childhood.” It is a dermatosis characterized by skin-colored to erythematous flat-topped papules measuring 2–5 mm in diameter, distributed symmetrically on the face, buttocks, and extremities. It commonly affects children of 2–6 years of age. Lesions are self-limiting and usually resolve within 8–12 weeks. Generalized lymphadenopathy and anicteric acute hepatitis may also occur.

Apart from viral infections, GCS is also associated with vaccinations. Numerous reports of GCS occurring in relation to vaccination have been documented [Table 1]. Vaccines reported to cause GCS include MMR, oral polio vaccine,



**Figure 2:** (a) Erythematous papules present on the extensor aspect of lower extremities and the gluteal region (b)

influenza, Japanese encephalitis, hepatitis A, and DPT vaccines. The exact mechanism of how vaccination precipitates GCS is not known. GCS might be a self-limiting dermatological response to viruses and the variation in the morphology may be due to individual characteristics of patients rather than the virus itself.<sup>[10]</sup> It has been observed that “combination” and “live” vaccines increase the risk of GCS.<sup>[4,10]</sup> The risk is also increased when vaccines are administered in the presence of viral infection.<sup>[2,11]</sup>

High T-cell reactivity due to preceding infection or preceding vaccination might be the underlying cause of GCS.<sup>[7]</sup> The present case strengthens the hypothesis that immunization during or followed by a viral infection can possibly result in Gianotti–Crosti syndrome.

## CONCLUSION

We report a case of vaccine-induced GCS in an 18-month-old child. Healthcare practitioners should be aware of this rare, self-limiting dermatological complication associated with vaccination.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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