PCD is an extremely rare cause of neonatal respiratory distress. It is usually an autosomal recessive disease with a prevalence of 1:15-30000 live births, but this is likely to be underestimated because underdiagnosis is common [1]. PCD is characterized by recurrent infections of upper and lower respiratory tract such as pneumonia, sinusitis, otitis media, and in almost half of the cases is associated with situs inversus (Kartagener syndrome) [2]. PCD diagnosis is rarely made in the newborn infant, and is often delayed until late childhood or even adulthood despite a history of unexplained respiratory distress in the neonatal period [1-5]. The association of PCD with neonatal respiratory distress suggests that motile cilia are critical for effective clearance of fetal lung fluid [5].

In our case, respiratory distress syndrome was associated with persistent rhinitis and productive cough. The early diagnosis of PCD is difficult and requires a high index of suspicion. We want to emphasize the diagnostic role of rhinitis and productive cough, that are both very rarely seen in normal neonates, but are common from the first few days of life in patients with PCD. These two clinical symptoms should increase the suspect especially when they occur simultaneously in a single patient and/or in an healthy newborn without respiratory risk factors. Early diagnosis allows an adequate program of treatment and follow-up, consisting of physiotherapy for airway clearance and microbiological surveillance with aggressive treatment of inter-current infections, in order to preserve the lung function in this genetic condition as long as possible [1].

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## Tetanus Vaccine in UIP in India

The World Health organization has recommended childhood immunization with Teatuns vaccine (or TT containing vaccines) with a 5 doses schedule [1]. This included a 3 doses in infancy as DPT, followed by booster at 4-7 year and another dose at 12-15 years of age [1]. However, the national immunization schedule in Universal Immunization Program (UIP) in India, recommends at least 7 doses of Tetanus vaccine are administered in various combinations (3 doses of DPT in infancy, 2 booster doses at 16-24 months and 5-6 years of age, 2 TTs at 10 and 16 years of age). The pregnant women get at least 2 additional doses in her life time for first pregnancy [2]. Adults get additional TT doses following injuries. This is suggestive that in India the TT vaccine is being overused for vaccination.

As a practitioner, I would like to know from the experts why booster of TT is given in India at 16-24 months, while it is not recommended by WHO? Why immunization schedule for Tetanus vaccine has 7 shots against WHO recommendation of 5 doses? Are these extra doses really necessary? For pregnant women and adults, who receive extra doses following injuries, does the current schedule poses any risk of hyper-immunization?

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**REPLY**

WHO has recommended 5 doses of tetanus toxoid for childhood immunization: the primary series of 3 doses of DTP3 (DTwP or DTaP) in infancy (age <1 year), with a booster dose of a tetanus toxoid-containing vaccine ideally at age 4-7 years and another booster in adolescence, e.g. at age 12-15 years. However, it has also advised a sixth dose

in early adulthood to provide added assurance of protection throughout the childbearing years, and possibly for life [1].

The choice of primary schedule as well as of the number and timing of boosters varies considerably among countries, often reflecting national epidemiological, programmatic and economic considerations. Why a booster is given at 16-24 months? As far as protection against tetanus is concerned, a primary series of three doses provide almost 100% protections that last at least for 3-5 years. After that boosters are needed since antibodies to tetanus decline over time and hence regular boosting is needed to ensure adequate levels of antibodies during any apparent/inapparent exposure to tetanus bacilli/toxin. Similarly, for diphtheria, the average duration of protection is about 10 years following a primary series of 3 doses of diphtheria toxoid [2]. Therefore, revaccination of adults against diphtheria and tetanus every 10 years may be necessary to sustain immunity in some epidemiological settings. To compensate for the loss of natural boosting, industrialized countries add childhood boosters of diphtheria toxoid to the primary immunization series of infancy. The optimal timing for and the number of such booster doses should be based on epidemiological surveillance as well as on immunological and programmatic considerations. Considering the current epidemiology of diphtheria in India (i.e. low-endemic), a booster against diphtheria is desirable, but not mandatory. Boosting at the age of 12 months, at school entry and just before leaving school are all possible options [2]. However, the case is entirely different with pertussis, where a booster during second year of life is a must following completion of primary series of vaccination. When given in the second year of life, this booster will improve protection following primary immunization if a less effective vaccine (wP or aP) is used, thus preventing early accumulation of susceptible individuals [3]. The timing of this booster should also provide an opportunity for catch-up vaccination and allow for the use of a combination vaccine containing both pertussis and Hib antigens. These are the reasons why a booster of DTP is recommended at 16-18 months by different authorities in India. In fact, CDC/ACIP have also recommended the same schedule [4].

IAPCOI has also recommended 6 doses of tetanus containing vaccines, the last one at 10-12 years, preferably Tdap/Td. Thereafter, no further need of any boosters as far as tetanus is concerned.

Administration of boosters more frequently than indicated leads to increased frequency and severity of local and systemic reactions as the preformed antitoxin binds with the toxoid and leads to immune-complex mediated reactions. Arthus reaction (type III hypersensitivity reaction) is an example of immune-mediated reaction which occurs rarely after vaccination but can occur after tetanus toxoid-containing or diphtheria toxoid-containing vaccines are used too frequently.

There is no need to offer two doses of TT or Td to every pregnant mother. Similarly, TT/Td boosters are not indicated in all cases of wound management. The sole deciding criterion is the past history of tetanus immunization of the individual. WHO has in fact issued comprehensive guidelines for administration of TT/Td to pregnant women [1]. In countries where maternal and neonatal tetanus remains a public health problem, pregnant women for whom reliable information on previous tetanus vaccinations is not available should receive at least 2 doses of tetanus toxoid-containing vaccine (normally dT) with an interval of at least 4 weeks between the doses. To ensure protection for a minimum of 5 years, a third dose should be given at least 6 months later. A fourth and fifth dose should be given at intervals of at least 1 year, *e.g.* during subsequent pregnancies, in order to ensure long-term protection. For women who have received 3 primary doses in infancy, two doses during the 1st pregnancy are indicated. The 2nd pregnancy requires 1 more dose and gives lasting protection for the reproductive years. For women who have received three doses and 1 booster in childhood, 1 dose each in the first and second pregnancy provide lasting protection. In women who have received 3 primary doses and 2 childhood boosters only 1 dose in the first pregnancy provides lasting protection. Women, who have received 5 doses of TT over a period of at least 2.5 years, get lasting protection for their reproductive years. For women who have received an additional adolescent booster, in addition to the 5 childhood doses, no further doses are necessary in pregnancy.

Evidence suggests that tetanus is highly unlikely in individuals who have received 3 or more doses of the vaccine in the past. Depending on the severity of the injury and on the reliability of the history of previous tetanus vaccinations, the vaccine should be given if the last dose was administered more than 10 years ago (or 5 years in the case of severe injuries).

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# Unusual Reason for Chronic Musculoskeletal Pain

Generalized pain especially in a periodic manner is a confusing entity challenging pediatricians to cover an extensive range of disorders including simply follow-up cases like "Growth Pain" to life threatening, hideously progressing hematologic malignancies [1]. This paper, however, aims to point out another entity in this range that is often to be missed and misplaced under other categories. Exposure to opium by undesirable inhalation, in children can make them susceptible to withdrawal symptoms.

Here we state our experience about three patients with chronic periodic musculoskeletal pain undergoing a broad investigation before diagnosis. These patients were two 11 and 13year-old boys, and a 13-year-old girl, complaining of generalized pain. The pain was periodic and would last a few days, yet no repetitive chronological pattern was found. The first case usually experienced abdominal cramping and sometimes loose stools during pain attacks. Physical examination revealed no abnormalities. Metabolic bone disorders, rheumatological and infectious diseases as well as hematologic malignancies and psychological disorders were ruled out by physical examination, laboratory, and imaging assessment in them. We attributed the pains to growth pain and the child was treated with Ibuprofen, which turned out to be ineffective. In the second case, recurrent pain was causing her to be absent at school. Eventually due to pattern of these pains coinciding with examination times, she was diagnosed with factitious disorder. The last patient was closely followed until the third visit when his mother complained of the same symptoms. He was inquired about the father's history. The father was a truck driver going on monthly trips. A coincidence between symptoms breakout and the father's trips was further revealed. It was then proven that the father was an opium inhaler with frequent administration of the drug at home. In the light of the new revelation, parental histories of the other two cases were revised. Their fathers were also opium inhalers, and symptoms breakout would exactly coincide with their absences (a trailer driver, a staffer who went to missions). The parents refused sampling of their children for measurement of blood opium levels. Therefore, the affirmation of the exact causality of generalized pain with abstinence symptoms was impossible for us.

Some important underlying factors for musculoskeletal pain in children; referred to in several studies, are hypermobility syndrome, subtle skeletal deformities, poor sitting postures, inflammatory, metabolic and hematologic diseases, lifestyle and psychological factors [1,2]. To our knowledge, opium withdrawal in passive inhalers is not considered in most of the studies [3,4]. Apart from being a farfetched diagnosis, using analgesic for pain relief that obscures the symptoms, cultural and social restrictions to confess to addiction, makes it difficult to be diagnosed. In these cases, the parents denied to accept our reasonings and hardly cooperated with the treatment guidelines.

In aggregate, it is appropriate to consider passive opium inhalation and its consequences as an underlying reason for chronic nonspecific pain in children. It is not always easy to infer to parents' addiction. Therefore, a careful family history in these situations may help in the diagnosis.

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