

Approach to Vaccine Hesitancy: A Case Report Conveying the CASE Approach*

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ABSTRACT

Vaccine hesitancy is a concept that has persisted from the time smallpox vaccine was first introduced to this day. When encountering vaccine-hesitant caregivers in clinical practice, it is important to approach vaccine hesitancy in accordance with evidence-based practices to effectively utilise the limited time available. Our case describes a 6-month and 20-day-old patient admitted to the paediatric ward with acute bronchiolitis and missed vaccinations. The patient's mother revealed that she did not get the infant vaccinated after 2 months of age because she was influenced by people around her. A structured interview was conducted with the mother following the CASE method. After the interview, the mother decided to get her baby vaccinated. The infant received Hepatitis B, diphtheria, tetanus, acellular pertussis, inactivated polio, Haemophilus influenzae type b, and conjugated pneumococcal vaccines on the day of discharge. Subsequent clinic visits confirmed adherence to the vaccination schedule.

Keywords: Child, interview techniques, vaccination hesitancy

INTRODUCTION

Vaccine hesitancy is not a new phenomenon, dating back to the time when Edward Jenner introduced the smallpox vaccine in England in the 1800s (1). However, vaccine hesitancy has become increasingly prevalent and has been identified as one of the top ten threats to global health by the World Health Organisation in 2019 (2). Vaccine hesitancy is described as delayed acceptance or refusal of some vaccines, whereas vaccine refusal is described as not accepting any of the vaccines despite the availability of vaccination services (3).

A decline in vaccination rates leads to an increased incidence of infectious diseases. Measles is a prominent example among childhood infectious diseases. "Canary in the coal mine" analogy is often used for measles and vaccination services (4). Miners used to send canaries into coal mines before descending because the birds were highly sensitive to toxic gases. If the canary showed signs of distress, it indicated a gas leak in the mine (5). Similarly, measles serves as an early indicator of challenges in vaccination and basic healthcare services, being a highly contagious yet preventable disease through successful

vaccination (4). The global measles vaccination rate was reported as 81% in 2021, whereas it was reported as 96% in our country (6). However, between March 2022 and February 2023, our country ranked second in the WHO European region with 466 reported measles cases (7).

Given the rise in indicative measles cases, addressing vaccine hesitancy in parents has gained increased importance and urgency in childhood immunization. This case presentation discusses an approach to a family experiencing vaccine hesitancy and provide a brief literature overview.

CASE REPORT

A 6-month and 20-day-old girl presented to the paediatrics clinic with a cough for the previous week and a fever for the last day. Physical examination revealed bilateral rales, intercostal retractions, a heart rate of 117 beats/min, and a respiratory rate of 55 breaths/min with tachypnoea. Other system examinations were unremarkable. Laboratory tests showed no abnormalities in complete blood count, kidney and liver function tests, or electrolytes. C-reactive protein was negative.

* We thank our patient and her family for letting us share their case.

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Chest X-ray was consistent with acute bronchiolitis. She was admitted to the paediatric ward with a preliminary diagnosis of acute bronchiolitis. The patient was started on intravenous hydration, inhaler salbutamol and budesonide therapy, and intermittent oxygen support through a mask.

Medical history revealed a full-term pregnancy with a birth weight of 4090 g at 39 weeks 5 days. The patient was regularly given iron and vitamin D supplements as recommended by her physician and was breastfeeding along with complementary foods. Upon inquiry, it was discovered that the infant received Hepatitis B vaccinations at birth and at 1 month, but subsequent vaccinations were not continued. While her treatment for bronchiolitis was continued successfully, consultation with social paediatrics was planned for the patient with missed vaccinations.

The day before discharge, the mother and baby were evaluated, and the CASE (Corroborate, About me, Science, Explain/Advise) method was used for communication with the mother. The steps of the interview are summarised in Table 1 (1).

Table 1: Interview technique for caregivers with vaccine hesitancy and the CASE approach (1)

Corroborate: Acknowledge the caregiver’s concerns and find a point on which you can agree.

About me: Describe what you have done to build your knowledge and expertise on the subject.

Science: Define what science says.

Explain/Advise: Explain your advice to the caregiver, based on science.

Following the CASE method, the mother’s concerns about childhood vaccinations were identified. She expressed concerns about potential side effects of vaccines that were suggested by her close relatives, leading her to worry and decide against getting her child vaccinated at and after the 2nd month. Feedback was provided to convey understanding of the mother’s concerns (Corroborate). Subsequently, information was provided about our practices regarding vaccines and our expertise in the field (About me). Using examples based on scientific evidence, the benefits of vaccines in our country were emphasised, demonstrating that the benefits outweigh potential side effects (Science). The mother was advised to complete the child’s vaccinations as soon as possible for the child’s health, and it was emphasised that our own children were fully vaccinated (Explain/Advise). Specific attention was paid to maintaining a respectful tone throughout all communication steps. The conversation dialog with the mother is shown in Figure 1.

On the day of discharge, the mother decided to get her child vaccinated, and the infant received hepatitis B, diphtheria, tetanus, acellular pertussis, inactivated polio, *Haemophilus influenzae type b* (DTaP-IPV-Hib pentavalent vaccine), and conjugated pneumococcal (PCV-13) vaccines in the hospital. As the patient was older than 3 months of age, a purified protein derivative (PPD) skin test was performed, and BCG vaccination for tuberculosis was planned according to the result with a referral to the Family Health Centre. After informing the mother about potential side effects (local reactions, fever, etc.) of the vaccines, the patient was discharged. At the outpatient clinic follow-up one month later, a second dose of PCV-13 and a second dose of DTaP-IPV-Hib pentavalent vaccine were

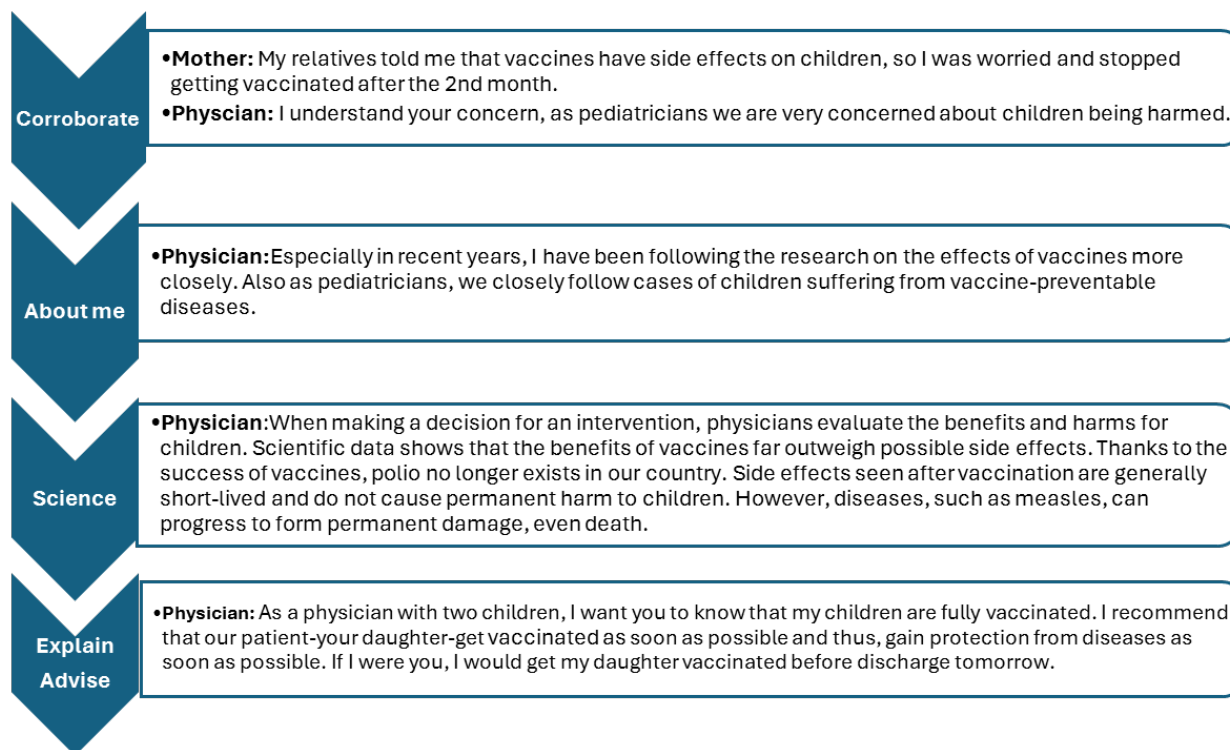


Figure 1: Implementation of the CASE approach.

administered to the 8-month-old patient. In the subsequent month, at 9 months of age, the third dose of DTaP-IPV-Hib pentavalent vaccine, oral polio vaccine, and measles vaccine were administered, completing the catch-up vaccination schedule. The mother was advised to continue the routine vaccination schedule of Expanded Immunisation Programme at and after 12 months of age.

DISCUSSION

The current surge in measles cases may be considered a warning sign for challenges in vaccination implementation. Therefore, engaging with caregivers with vaccine hesitancy and aiming to complete vaccinations for their children has become more crucial. The utilisation of appropriate communication techniques and evidence-based discussion methods when interacting with families can lead to positive changes in vaccination decision-making (8).

Comprehending the reasons behind vaccine hesitancy, a concept ranging from delaying one vaccine to refusing all vaccines, is crucial. The World Health Organisation categorises these reasons into three main groups: contextual influences, individual and group influences, and vaccine/vaccination-specific issues. Contextual influences include communication and media, politics and policies, anti-vaccination lobbies, geographical barriers, and the pharmaceutical industry. Individual and group influences include personal experiences with past vaccinations, perception of vaccination as a social norm, knowledge and awareness of diseases and vaccines, and perception of risk/benefit. Lastly, vaccine-related influences include the method of vaccine administration, design of the vaccination schedule, role of healthcare professionals, and costs for vaccination (9). In this study, mother's vaccine hesitancy originated from the influences of her vaccine-sceptical environment.

Various approaches exist to aid physicians with limited time to conduct structured interviews with vaccine-hesitant caregivers. These include the CASE approach (Corroborate, About me, Science, Explain/Advise), AIMS approach (Announce, Inquire, Mirror, Secure), and motivational interviewing techniques (8, 10-12). Effective communication skills form the basis of these approaches. Rather than directly conveying scientific information about vaccines to parents, a more effective discussion is achieved by eliciting emotions such as empathy, compassion, and trust in healthcare professionals (8). A study using motivational interviewing techniques showed a decrease from 9% to 6.4% in families with vaccine hesitancy in comparison to standard paediatric care (13). However, no research has compared the effectiveness of these different approaches for vaccine hesitancy. Further studies are needed to determine which method is more effective and feasible in achieving positive outcomes.

Studies show that caregivers primarily rely on healthcare professionals for information about vaccines and consider physicians to be the most trustworthy source (8, 14). Physicians' approaches can influence vaccine-hesitant caregivers to change

their decisions and have their children vaccinated. On the other hand, a study showed that 37% of paediatricians discontinued follow-ups of unvaccinated children. It is recommended that discussions about vaccination should be conducted at every visit of unvaccinated children, and these children should not be discontinued from follow-up (8, 13).

CONCLUSION

In conclusion, when encountering caregivers with vaccine hesitancy, creating a communication environment characterised by respect and empathy, understanding caregivers' concerns, providing accurate information grounded in specific scientific evidence, positioning oneself as a reliable and determined source of guidance in the eyes of family as the child's healthcare provider, and ensuring ongoing dialogue about vaccination during subsequent visits until the family decides to vaccinate contribute to the management of vaccine hesitancy by healthcare professionals.

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