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M011
HYPERSENSITIVITY TO AMOXICILLIN-CLAVULANATE MANIFESTING AS ACUTE LOCALIZED EXANTEMATOUS PUSTULOSIS
Y. Gao*, M. Norris, T. Craig, Hershey, PA

Introduction: In 2005, Prange and colleagues identified a localized variant of acute generalized exanthematous pustulosis (AGEP) they termed ‘acute localized exanthematous pustulosis’ (ALEP). ALEP is characterized by sterile pinhead-sized nonfollicular pustules over an erythematous base typically distributed on the face, neck, or chest. Over 80% of cases are in response to medications, with betalactam antibiotics being frequently implicated. We describe a case of facial ALEP that developed three days after initiating amoxicillin-clavulanate therapy.

Case Description: A 25-year-old female with idiopathic urticaria on chronic antihistamine therapy presented to clinic with complaint of a possible drug reaction. Three days into taking amoxicillin-clavulanate after a wisdom tooth extraction she developed crops of pustules on the chin and lower cheeks bilaterally that were preceded by a flushing sensation and pruritus of the face and neck. She reported a similar rash following prior usage of amoxicillin. With drug cessation her symptoms resolved within two days of discontinuation.

Discussion: Both ALEP and AGEP are Type IV hypersensitivity reactions that result in CXCL8-dependent neutrophilic recruitment and pustule formation. ALEP is rarely reported, with only 38 identified cases in our literature search. Like AGEP, removal of the trigger medication usually leads to rapid improvement. Currently, treatment guidelines do not exist although thus far cases have been self-limited and without serious morbidity. As cases of recurrence with exposure to the triggering medication are common, avoidance of the inciting drug should be advised. Increased awareness of this atypical variant is necessary, as poor recognition of ALEP may account for its rarity in the literature.

M012
SERUM SICKNESS-LIKE REACTION AFTER PEGASPARGASE ADMINISTRATION WITH SUBSEQUENT TOLERANCE OF NON-PEGYLATED ASPARAGINASE
A. Gliberti*, J. Moy, L. Giordano, Chicago, IL

Introduction: Pegaspargase is a critical component in Acute Lymphoblastic Leukemia (ALL) treatment; however, its use is associated with high immunogenicity, manifested as hypersensitivity reactions and/or neutralization, often significantly impacting its future utility. Delayed hypersensitivity reactions have been rarely reported.[1,2,3,4].

Case Description: After recent chemotherapy for B-ALL, a 2-year-old male presented with three days of progressive symptoms consistent with serum sickness-like reaction (SSLR), including: pruritis; diffuse, serpiginous, erythematous macules with central diskiness; malaise; periorbital edema; and wrist/ankle effusions with refusal to walk. Workup revealed hypocomplementemia, supporting a SSLR diagnosis. Symptoms subsided over two days after initiation of diphenhydramine and prednisone, with complement normalizing over the following two weeks.

Notable preceding medication exposures included: trimethoprim/sulfamethoxazole (started 2 months prior) and a second dose of Pegaspargase which had caused anaphylaxis 11 days prior to symptom onset. Trimethoprim/sulfamethoxazole was resumed and he was transitioned to non-pegylated Erwinase, both which were tolerated without incident. The family denied any preceding fevers, viral symptoms, sick contacts, insect bites, or prior exposure to polyethylene glycol (PEG).

Discussion: Due to timeline of events and lack of alternative provoking medication/disease pathology, we theorized Pegaspargase as the culprit agent for our patient’s SSLR. Subsequent tolerance of non-pegylated formulation further led us to postulate either PEG or an unknown excipient as the triggering agent. While at least one prior case report has attributed PEG to be the inciting agent in a Pegaspargase immediate hypersensitivity reaction[5], we believe this is the first reported case of SSLR possibly attributable to PEG or additional excipient.
Discussion: We presented a case of a successful graded-dose administration of the second dose of the Pfizer-mRNA vaccine for SARS-CoV-2 in a patient with previous anaphylaxis to the first dose. The use of skin testing to the vaccine and its components remains controversial. Graded-dose administration of vaccines may improve vaccination rates in patients with high-risk of hypersensitivity reactions to these vaccines.

Table 1 Four-step graded dose administration protocol used for the Pfizer COVID-19 vaccine

| Dose | Dilution | Time |
|------|----------|------|
| 0.05 mL | 1:10 Dilution | 0 min |
| 0.05 mL | Full-strength | 15 min |
| 0.1 mL | Full-strength | 30 min |
| 0.15 mL | Full-strength | 45 min |
| Observation | | 75 min |

M014
NSAID ASSOCIATED EXERCISE-INDUCED ANAPHYLAXIS
S. Sylvestre*, V. Durf, T. Al-Shaikhly, Hershey, PA

Introduction: The pathogenesis of exercise-induced anaphylaxis is not well-understood. However, the addition of another trigger such as food or medications may be a predisposing factor for exercise-induced anaphylaxis. We present the case of a woman who developed exercise-induced anaphylaxis after ingesting an NSAID.

Case Description: A 40-year-old woman with no history of food or medication allergies presents to clinic. She is an avid runner preparing for a marathon who developed anaphylaxis during a training run. While the patient has previously tolerated NSAIDs, she took prophyllactic naproxen prior to her run and by mile four she developed pruritus and periorbital swelling. By mile six she developed hives, dyspnea, lightheadedness, and vomiting for which she called her husband to present to the hospital. She was supported through anaphylaxis without epinephrine in the emergency room and discharged home. No foods were ingested leading up to the event that were not tolerated subsequently. Following the clinic visit she now strictly avoids NSAIDs, carries an epinephrine autoinjector, and has not had recurrence of symptoms with exercise.

Discussion: NSAIDs are capable of both eliciting IgE-mediated allergic responses and directly promoting mast cell degranulation of histamine. Furthermore, exercise can result in various physiologic changes that may promote basophil histamine release. For these reasons, the combination of NSAID use and exercise may predispose certain individuals to anaphylaxis. It is important to be mindful of this phenomenon to provide appropriate guidance regarding safe exercise and how to approach the management of anaphylactic symptoms that may arise during exercise.

M015
A PATIENT WITH AN ALLERGIC REACTION TO THE PFIZER COVID-19 VACCINE SUBSEQUENTLY TOLERATES JOHNSON&JOHNSON VACCINATION
A. Patterson*, Z. Ren, M. Jerath, Saint Louis, MO

Introduction: Messenger RNA (mRNA) vaccines have been critical to combating COVID-19. While most patients tolerate these vaccines, a small number of individuals experience immediate reactions consistent with mast cell degranulation. Given this is the first time mRNA vaccine technology has been used on this scale, many questions remain about the evaluation and management of these patients.

Case Description: A 52-year-old male with a medical history of seafood allergy, allergic rhinitis, and asthma was referred to our clinic after he had an adverse reaction to the first dose of the COVID-19 Pfizer vaccine. Within 30 minutes of the injection he developed generalized pruritus, a raised rash on his chest, throat irritation, and wheezing. These symptoms resolved without treatment within 6 hours. We performed vaccine excipient skin testing which demonstrated sensitization to polyethylene glycol 3500 via skin prick testing at a concentration of 1.7mg/mL. To complete his vaccine series, he was given the Johnson & Johnson vaccine, which he tolerated.

Discussion: Adverse vaccine reactions are a barrier to opposing the COVID-19 pandemic. While the mechanisms of immediate-type hypersensitivity reactions to the mRNA COVID-19 vaccines are not fully understood, our patient had a compelling history for an immediate-type reaction. Although the validity of COVID-19 vaccine excipient skin testing is unclear, it is reasonable to counsel patients with sensitization to avoid repeat vaccination. Fortunately, alternative vaccine platforms exist, and we now have concrete evidence that they can be safe for those with an immediate-type hypersensitivity reaction to an initial mRNA vaccine.