

## Robin

### Case

- Robin, a 30-year-old woman who had a total splenectomy 5 years earlier after an auto accident, presents in the fall for a routine check-up
- Physical exam shows:
  - Temperature: 98.6° F
  - BP: 124/80 mm Hg
  - All other vital signs are normal
- Records indicate that shortly after her splenectomy, she received the conjugate meningococcal, *Haemophilus influenzae* type b, and 23-valent pneumococcal polysaccharide vaccines
- She has since received no other vaccinations, citing a general fear of vaccines

### PCP Discussion

Dr. Flores: This is a 30-year-old woman who had a splenectomy, and she's just in for a routine checkup. The first question we want to discuss is, "How do you address her concerns?" Because she says that she has not received any other vaccines since that trauma, or the motor vehicle accident, because she's afraid. And so, my answer to that is I'd want to know more about exactly what her concerns are—whether they all revolve around the spleen, and she has some misunderstandings about how her immune system works after a splenectomy; or whether it's more of the general unease that seems to be out there these days against vaccines. There are a lot of people that are delaying the vaccines for their kids, because of autism fears and other concerns, that are unfounded.

So, I'd like to know what her concerns are, but in general, I would just try to be very reassuring, and emphasize the long history that we have using vaccines—how successful they've been at controlling many, many, illnesses and infectious diseases; and worldwide, how we've even been able to eradicate certain diseases using the immunizations. But in terms of that question, I would tease that out a little bit more, to find out what specifically she's worried about.

Maybe this will resonate with you: I think it is getting more and more complicated to sort out which vaccines to give. I think that in the future there's probably going to be some added certification for vaccinology, or something like that, because even just among the flu vaccines, there are about seven different flavors, and I'm not even talking about brands—if I were, there would be way more—but we have the trivalent and the quadrivalent vaccines, and the high-dose vaccine for the seniors, and the nasal flu vaccine, and then there's the intradermal vaccine...it's becoming very confusing.

I used to keep a copy of that colorful CDC handout—the one you all probably get mailed to you—somewhere in the office. Now I have an app, too. I went to a conference about six months ago where they mentioned an app. It's an app from the Centers for Disease Control and Prevention (CDC), and you can download it to your iPhone, and then there's also one that's just for adults, from the American College of Physicians. So when we get to the next question, "Which vaccines do you administer and why," I would probably look at my American College of Physicians app. Basically you put in the age of the person and any associated risk factors.

I would recommend probably, at a minimum, because it is fall, some sort of influenza virus vaccine. And I would probably recommend the tetanus, diphtheria, and acellular pertussis (Tdap) vaccine, because of the serious epidemic of pertussis that's going around, and she may be trying to have children, or she may be around family members who are at risk.

Dr. Irvine: This is Dr. Irvine. I think the main point here is the fact that this lady had a splenectomy, so she is basically at high risk for all of those organisms that are capsule-forming. So in my opinion, she would need the 23-valent pneumococcal polysaccharide vaccine (PPSV23) since it's been five years since she last had it. Usually with people like her, I stick to the same recommendations as if, say, she was over 65 and at high risk. I would give her a dose every five years, or a 13-valent pneumonia conjugate vaccine (PCV13) just on one occasion. And really, from my perspective where I live, a lot of this depends on what kind of insurance she has, and what cost it's going to be to her. Some insurance companies may not cover the PCV13 for somebody who has had a splenectomy

Dr. Flores: I have one last question: If we give her a flu vaccine, what would the other doctors...which one would you give her? Would you give her the trivalent or the quadrivalent vaccine, or...?

Dr. Cullen: If she would qualify, I would go with the quadrivalent, just for extra protection. Whether that would have an effect—whether the splenectomy would have a bearing on that, I'm not sure, but that's what I would say may be the best option.

## **Faculty Wrap Up**

Dr. File: Hello, this is Dr. File here to provide commentary and conclusions regarding the first panel discussion in our series.

For Robin, our panel recognized the need to address her fears and concerns about vaccinations, and the need to reassure her about their safety. Certainly she needs as much protection as possible, because she is asplenic and therefore immunocompromised. Clearly, she needs the flu vaccine, Tdap vaccine, and the PCV13 as well as the PPSV23.

Now it is especially important for her to receive the pneumococcal vaccines, due to the lack of opsonization in asplenic individuals, as was pointed out by Dr. Irvine. Robin is at high risk for disease caused by these capsule-forming organisms. Note that in this case, the two vaccines should be given at an interval of at least eight weeks, with the PCV13 given first in the sequence. This vaccine is recommended first, since it has higher immunogenicity, which is important for patients who are immunocompromised or have had a splenectomy. This helps ensure that they achieve higher antibody levels. The PPSV23 is recommended afterward, in part to enhance protection via exposure to the additional serotypes. These two vaccines should not be given at the first visit, or at least not at the same visit.

Now in a patient who has previously received the PPSV23, it is important to wait for five years to administer another dose of the PPSV23. Certainly this works for Robin, since she received the PPSV23 five years earlier, following her splenectomy. To clarify a point made by one of our panelists, the PPSV23 should not be recommended every five years.

It is also important to be aware that the recommendations for the subsequent dose of the PPSV23 is different for patients with immunocompromising conditions or who are functionally asplenic from those with underlying non-immunocompromising conditions, such as smokers or those with chronic heart or lung disease. The latter group would not receive another PPSV23 until age 65—at which time the PCV13 is recommended, to be followed six to 12 months later by the PPSV23. Note also that the six to 12 month interval between the PCV13 and the PPSV23 for patients with underlying non-immunocompromising conditions differs from that for patients with immunocompromising conditions; for the latter group, the interval is at least eight weeks.

Of available flu vaccines, Robin has a range of options, including the live attenuated influenza vaccine (LAIV), unless she happens to have an allergy to eggs. However, the LAIV would be contraindicated if she were pregnant. It's also important, not just to discuss, but to strongly recommend vaccination to this patient. Studies have documented that a strong recommendation from a patient's health care provider is among the strongest motivators to receive vaccines. So the onus is on the health care provider—on us—to make sure she receives all necessary vaccinations.

The panel's concerns about the increasing complexity of recommendations for immunization practices—such as the differences in recommendations for pneumococcal vaccine for immunocompromised patients compared to those with underlying conditions—are understood. Certainly the CDC, the American Academy of Family Physicians, and other organizations, such as the National Foundation for Infectious Diseases, have tried to make these as clear as possible. The apps mentioned by Dr. Flores can indeed be helpful in this regard.

Concerns about insurance coverage are also common, and we must work with our patients to optimize their protection against vaccine-preventable diseases, while being sensitive to their coverage and staying within their financial means.