Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration

One Defect Away From Perfect

To the Editor:

In a recent issue of CHEST (January 2011), Gounant et al1 showed that dedicated linear echoendoscope endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) needles are able to release metal particles, probably by friction between the stylet and the needle, with a potential risk of injecting particles into nodes. After reading this article, we are a bit confused for several reasons.

First, we do not understand the primum movens and the intrinsic aim of designing a study like this. Logically, we should perform similar investigations on all surgical, endoscopic, and radiologic procedures in which metal tools are used. Indeed, a simple blood test with a needle could release metal particles. Therefore, we do not understand the need to focus specifically on dedicated EBUS-TBNA needles.

Second, the article does not indicate the concentrations of iron, titanium, nickel, and chromium that can be potentially harmful to the body. This is important information, considering how many times a patient may undergo EBUS-TBNA over a lifetime (one, maybe two times). Accordingly, we have some doubts that the concentrations released in the lymph nodes are so high as to be potentially harmful to the body.

In conclusion, we completely agree with the authors that failed to understand why this study was designed. In fact, transbronchial needle aspiration (conventional and endobronchial ultrasound-guided) was introduced in our respiratory disease center in 2007, and we very rapidly became intrigued by the deposition of foreign material on slides prepared for cytopathologic examination. This is a very unusual finding. Many specimens are examined each day in the cytopathology laboratory, and such deposits had never been previously observed, regardless of the type of needle used for sampling (eg, pleural, peritoneal, or cerebrospinal fluids; peripheral lymph node or skin nodule; transtracheal needle aspiration). This study was designed to define the nature of this foreign material and to identify its origin. The blind review of 141 cytospins clearly demonstrated that particles were only observed on EBUS-TBNA samples and not on conventional transbronchial needle aspiration samples. We, therefore, focused our investigations specifically on ViziShot needles, as these particles may interfere with pathologic interpretation by cytopathologists (false diagnosis of anthracosis), and we also wanted to find a scientific explanation for these findings. This study confirmed that the particles released were metal alloys used in the manufacture of the needles (iron, titanium, nickel, and chromium) and that these EBUS-TBNA ViziShot needles are potential contaminants of aspirated lymph nodes. The hypothesis of poor quality control was proposed, especially because, at the time of the study, these needles were the only dedicated EBUS-TBNA needles available.

References


Response

To the Editor:

We thank Dr Casoni and colleagues for their interest in our recent article published in CHEST (January 2011)3 on the release of metal particles from ViziShot needles (Olympus Ltd; Tokyo, Japan) used for endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA). We believe that Dr Casoni et al failed to understand why this study was designed. In fact, transbronchial needle aspiration (conventional and endobronchial ultrasound-guided) was introduced in our respiratory disease center in 2007, and we very rapidly became intrigued by the deposition of foreign material on slides prepared for cytopathologic examination. This is a very unusual finding. Many specimens are examined each day in the cytopathology laboratory, and such deposits had never been previously observed, regardless of the type of needle used for sampling (eg, pleural, peritoneal, or cerebrospinal fluids; peripheral lymph node or skin nodule; transtracheal needle aspiration). This study was designed to define the nature of this foreign material and to identify its origin. The blind review of 141 cytospins clearly demonstrated that particles were only observed on EBUS-TBNA samples and not on conventional transbronchial needle aspiration samples. We, therefore, focused our investigations specifically on ViziShot needles, as these particles may interfere with pathologic interpretation by cytopathologists (false diagnosis of anthracosis), and we also wanted to find a scientific explanation for these findings. This study confirmed that the particles released were metal alloys used in the manufacture of the needles (iron, titanium, nickel, and chromium) and that these EBUS-TBNA ViziShot needles are potential contaminants of aspirated lymph nodes. The hypothesis of poor quality control was proposed, especially because, at the time of the study, these needles were the only dedicated EBUS-TBNA needles available.

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