

The role of other imaging modalities in evaluating the tubal patency

Sir,

I anxiously read the recently published an article in your journal entitled "Imaging techniques for assessment of tubal status" and I found it as a very well-structured article, which reviewed the evidence about the imaging modalities for evaluation of the tubal patency.^[1] They finally focused and confirmed on the hysterosalpingo-contrast-sonography (HyCoSy) as a new and potentially useful and reliable imaging in these patients. Although they attempted to review all applied imaging technique, they missed some valuable and practical, which we would like to talk about them in this letter.

A newly considered imaging which every day is declared its value in assessing the pelvic organs especially uterus is magnetic resonance imaging (MRI). MRI-hysterosalpingography (MR-HSG) in addition to conventional MRI (with or without contrast) is effectively used in diagnosing the tubal and uterus cause of infertilities. MR-HSG was firstly used for a 32-year-old woman with a history of iodine-induced hypothyroidism, which conventional HSG was contraindicated for her.^[2] On that time, MR-HSG was recommended for patients with contraindication for conventional HSG. The method of MR-HSG was simply and briefly described in the following sentence derived from Ma *et al.* study; "A balloon catheter was placed into the uterine cavity, and then flash 3D coronal scanning by MRI was performed with the uterine injection of a diluted mixture of gadolinium-based contrast (1:100), and data were reconstructed after digital subtraction scan."^[3]

There are many benefits in MR-HSG, which stated in the previous reports; (1) Nonionizing radiation is used in scanning, it is so important when consider that the target population of this workup is in fertility age, (2) it is not operator dependent versus sonography, (3) evaluating the other causes of infertility and assessing the adjacent organs, (4) selective tubal catheterization is possible during the procedure, (5) excellent resolution and multiplanar imaging, (6) evaluating distal tubal pathology and possible peritubal adhesions.^[4,5]

However, there is some limitation for this modality; (1) An experienced reader and radiologist is needed for interpreting the pictures, (2) there are some contraindications for MR-HSG including general MRI contraindication such as hepatic and renal insufficiency, intolerance to gadolinium-based contrast, severe claustrophobia, and metal device in body, e.g. cardiac pacemakers, cochlear implants. Furthermore, MR-HSG is an expensive and time lasting procedure which is the other limitations. (3) Dislocating the catheter due to unavoidable motion and higher failure rate, (4) felling discomfort during the contrast injection up to 21%.^[6]

Thirty minutes is the maximum time, which take by MR-HSG that is acceptable for nonemergency patients such as infertile women.^[7] Furthermore, MR-HSG can be hybrid with conventional radiography for more accurate diagnosis of the anatomical defects.^[8]

On the other hand, other multi-sectional imaging which can provide more anatomic information is virtual HSG with multidetector computed tomography (CT) technique. Due to high dose of radiation, this modality is not preferred for simple and noncomplicated cases but sometimes "virtual HSG with multidetector CT may provide a diagnostic advantage in complex cases."^[9]

Finally, MR-HSG or even multidetector CT scanning can be helpful in infertile patients with normal HyCoSy doubtful for tubal and peritubal lesions.

Mahyar Mohammadifard, Amin Saburi¹

Department of Radiology, Imam Reza University Hospital, Birjand University of Medical Sciences, Birjand, ¹Chemical Injuries Research Center, Baqiyatallah University of Medical Sciences, Tehran, Iran

Address for correspondence:

Dr. Amin Saburi,
Chemical Injuries Research Center,
Baqiyatallah University of Medical Sciences,
Mollasadra Street, Vanak Square, Tehran, Iran.
E-mail: aminsaburi@yahoo.com

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