Ultrasound (US) contrast agents have been used extensively during the last years for imaging various parts of the body. Their commonest way of administration is intravenously. However, they have also been given intracavitarily for specific indications. Oral administration of these agents has been described so far in medical literature only as work in progress. As far as we know, this is the first case report in which oral administration of a US contrast agent has aided in the patient’s diagnosis. We present the case of a patient with a cervical mass in whom sonographic examination with per os administration of SonoVue led to the diagnosis of a pharyngoesophageal tumour. The diagnosis was confirmed on barium swallow and endoscopy-guided biopsy.

**Case report**

A 25-year-old man presented to the Emergency Department of our Hospital complaining of dysphagia and weight loss (12 kg in 3 months). Physical examination revealed a cervical mass initially presumed to represent thyroid goiter. A cervical CT scan already performed had diagnosed a retropharyngeal abscess. Cervical US showed a soft tissue mass which displaced the thyroid anteriorly but did not arise from the gland otherwise normal parenchyma. This space occupying lesion contained gas and was sonographically presumed to originate from the deformed oesophagus. It showed areas of rich vascularity on color Doppler (Fig. 1). With the patient’s informed consent, US contrast agent SonoVue was given per os (one drop in 20 mL of tap water). Subsequent US scan showed the contrast agent coursing along the pharynx and oesophagus. The lower pharyngeal and upper oesophageal wall was irregularly thickened and the lumen was stenosed (Fig. 2).

On the following day, a barium swallow examination showed a large mass occupying the lower pharynx at the level of the piriform sinuses and part of the upper oesophagus with irregular mucosal derangement (Fig. 3). The retropharyngeal space was increased and the hypopharynx was anteriorly displaced. These findings were attributed to the presence of the mass and possibly of enlarged lymphnodes. Barium pooled in the piriform sinuses, as a result of abnormal pharyngeal motility. These findings were consistent with malignancy.

Two days later an upper gastrointestinal tract endoscopy examination was performed. The pharyngeal lumen appeared concentrically stenosed. Biopsy specimens were obtained. Pathology study diagnosed squamous cell carcinoma of the oesophagus, extending to the pharynx, of intermediate to high differentiation with keratinisation and infiltration of the chorion.

**Key-word:** Ultrasound (US), contrast media.
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mers (1). Their diameter is approxi-
shell of proteins, lipids or poly-
filled microbubbles contained in a
contrast agents consist of gas-
filled microbubbles contained in a
shell of proteins, lipids or poly-
mers (1). Their diameter is approxi-
mately 3-5 µm, (about the diameter of a
red blood cell). They are usually
administered intravenously and, being too big to pass through the
endothelial vessel wall, they remain in the lumen of blood vessels (2).
These agents are used extensively
intravenously for the safe imaging
investigation of many body organs
with excellent toleration (3). For two of the most commonly used drugs
containing perflutren and sulphur
hexafluoride microspheres, there are
very low rates of anaphylactoid reactions (1:7000 or 0.014%) (4-6).
These are lower than the respective rates of CT contrast agent adverse
reactions (0.035%-0.095%) (4, 7, 8).
Intravenous contrast enhanced ultra-
sound (CEUS) is avoided as a pre-
caution only in patients with serious
cardiopulmonary compromise (9).
However, these drugs are also
administered intracavitarily for spe-
cific indications, such as vesico-
ureteral reflux studies in children (10), follow up of renal transplant recipi-
ents (11) and percutaneous drainage
procedures. They allow visualisation
of the drainage duct location post
intraductal injection, determining if a
drainage duct is correctly positioned
or obstructed, as well as depicting
the shape of the biliary tree (12) and
diagnosing biliary leakage post T-
tube removal (13). In general, US
contrast agents can be instilled into
any sonographically accessible body
cavity, with other clinical applica-
tions including abscesses, pancreatic
psycysts or other pancreatic
complications, intestinal or other fis-
tulas, gastroesophageal reflux, as
well as stenoses of the gastric and
intestinal lumen (14). So far, only
work in progress in this field has
been published (15).
In conclusion, we believe that this
case is an example suggesting the
valuable usage of US contrast
agents following other administra-
tion routes, besides intravenous
injection. It is a fast, non-expensive
and easy to perform examination
which can aid to the patient's diag-
nostic pathway.

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