Abstract

Study objectives:

To compare the diagnostic reliability, accuracy and safety of ultrasound-guided biopsy and ascites puncture in patients with primarily inoperable malignant tumor of the ovary.

Study design:

Retrospective and prospective data analysis

Settings:

Department of Obstetrics and Gynecology, Medical Faculty and Teaching Hospital in Pilsen

Methods:

We retrospectively analyzed a group of patients with primarily inoperable ovarian tumor, who underwent an ascites puncture with subsequent cytologic examination as a part of tumor verification before neoadjuvent chemotherapy commencement.

The results were compared to a group of patients, who underwent an ultrasound-guided biopsy with subsequent histopathologic examination for determining of their diagnosis. We compared the adequacy, i.e. possibility to verify biologic nature, origin and histologic subtype of the tumor, accuracy, i.e. agreement between the result of the diagnostic method and final postoperative histology, and safety, i.e. recorded complications of the procedure.

To validate the result of this comparative study we prospectively evaluated a group of patients where both methods were used.

Results:

In the ascites puncture group, a total of 55 procedures were performed. Adequate sample was obtained in in all patients and one severe complication was noted (1.8%). Malignant cells were detected in 31 (56.4%) cases, the origin of the tumor was determined in 23 (41.8%) cases and the histologic subtype in 13 (23.6%) cases. The definitive postoperative histology was available

in 45 (81.8%) women and an agreement in preoperative and postoperative diagnosis was found in 10 patients (22.2%).

A total of 79 biopsies was performed in the ultrasound-guided biopsy group, the adequate sample was obtained in all patients and no severe complication was observed. The malignancy was confirmed in 76 (96.2%) patients, the origin of the tumor was determined in 71 (90%) cases and the histologic subtype of the tumor in 66 (83.5%) women. The definitive postoperative histology was available in 51 (64.5%) and the agreement was found in 46 (90.2%) patients.

In the prospective comparison study, 48 women underwent both procedures. Significant differences in favor of ultrasound-guided biopsy were found in all studied variables (malignancy confirmation 72.9% vs. 95.8%, tumor origin 52.1% vs. 89.6%, histologic subtype 43.8% vs. 85.4% and accuracy, i.e. agreement of preoperative and definitive diagnosis 43.7% vs. 95.4%).

Conclusions:

Ultrasound-guided biopsy (Tru-Cut biopsy) is an accurate, reliable and safe minimally invasive method. It allows obtaining of a valid tissue sample for histopathologic examination in primarily inoperable advanced abdomino-pelvic tumors.

Owing to the high reliability and accuracy, the Tru-Cut biopsy has the capacity to replace ascites puncture with cytologic examination or a more invasive method for adequate tumor sampling such as a diagnostic laparoscopy or exploratory laparotomy.

Routine association of ascites puncture with ultrasound-guided biopsy doesn´t increase the probability of making a diagnosis sufficient for neoadjuvant therapy commencement.