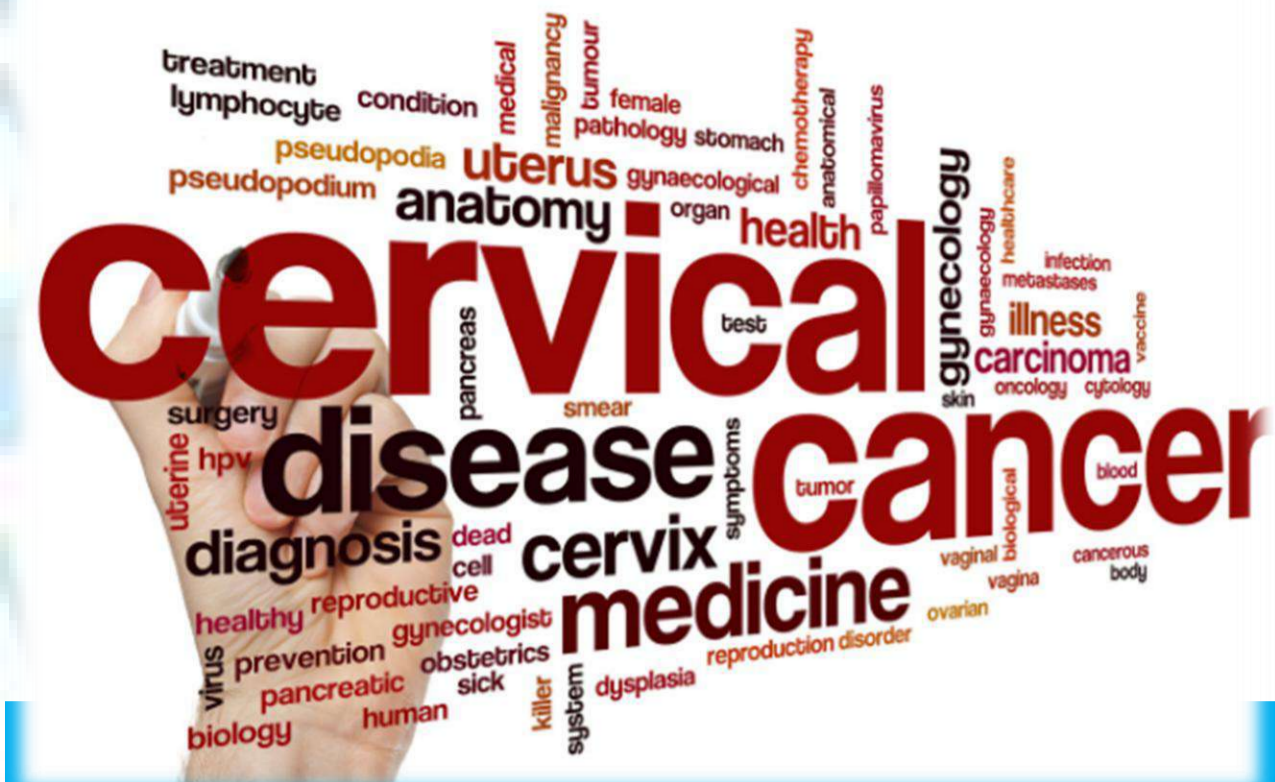


## MRI imaging of cervical carcinoma: a new practical approach to staging

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### Introduction

Cervical cancer (CC) is the second most common cancer and the third leading cause of cancer death among women in developing countries. In the Republic of Moldova it is the second most common cancer in women after breast cancer. Committee for Gynecologic Oncology (FIGO) recently revised the CC staging guidelines (2018) which include more detail the imaging characteristic of nodular lesions, allows the selection and evaluation of therapy, estimation of prognosis and estimation of treatment results. MRI can accurately assess morphological changes: tumor size, parametric invasion, pelvic lateral wall, and lymph node invasion.

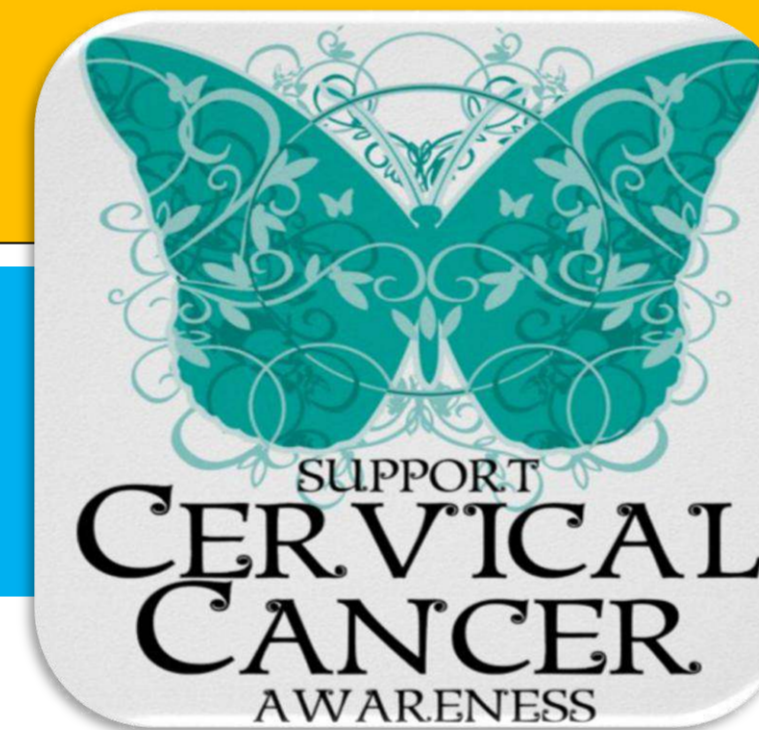
### Purpose

Elaboration of the imaging algorithm in assessing the degree of local invasion of cervical cancer to determine the treatment strategy in correlation with the new FIGO staging (Tab. 1).

### Results

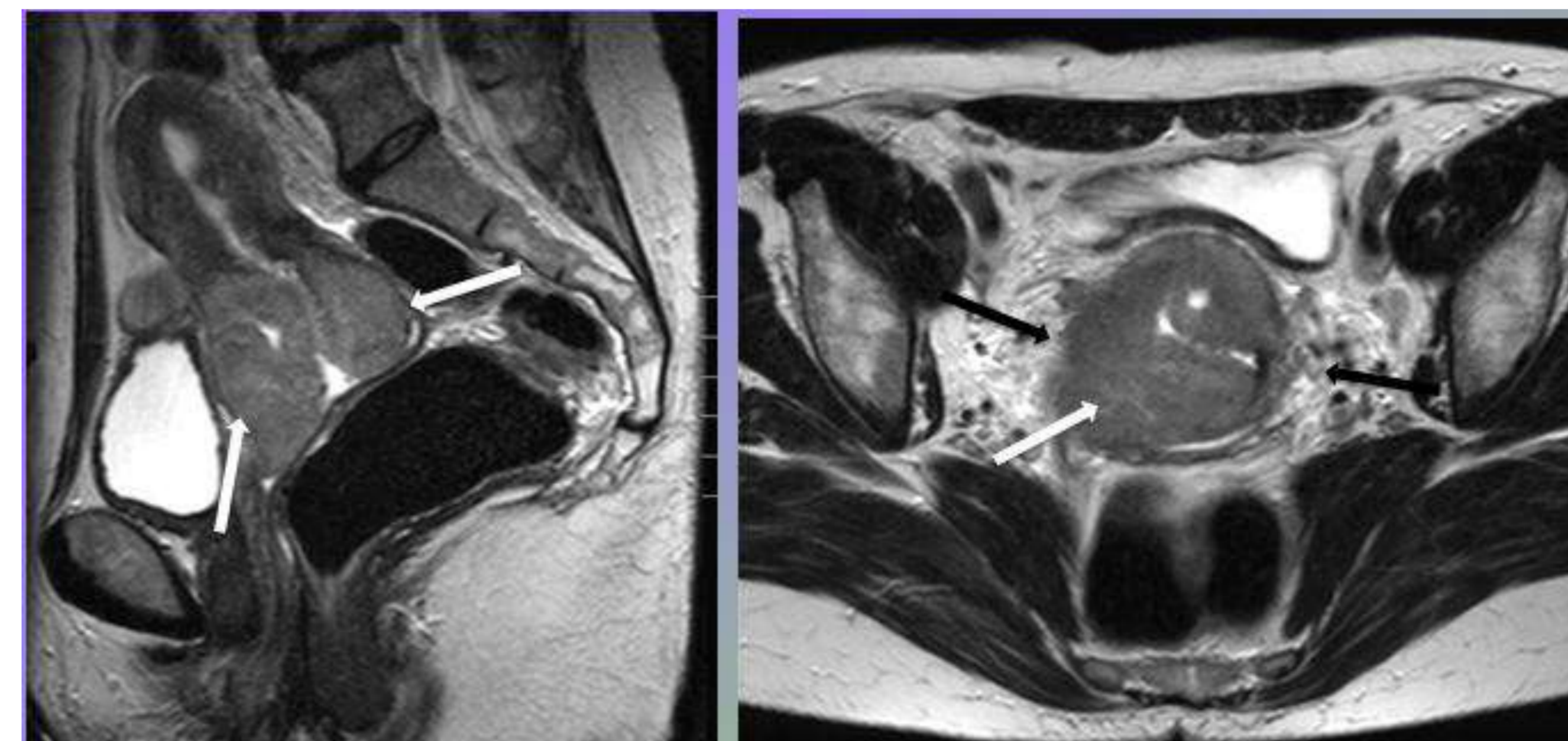
**Table 1:** Imaging algorithm in cervical cancer

Investigation type	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)	Effectiveness (%)
<b>Ultrasound</b>	78,9	60,5	68,4	59,1	64,1
<b>MRI</b>	98,9	93,3	91,5	99,2	95,7
<b>Ultrasound + MRI</b>	99,4*	95,3	93,9	99,6*	97,0



### Material and methods:

The prospective study included 92 patients with cervical cancer (morphologically confirmed) who underwent pelvic MRI. Sensitivity and specificity were estimated for different parameters depending on the new staging of CC (2018) (Tab.2). MRI results were correlated with biopsy results as well as intraoperative results (Fig. 1, 2)

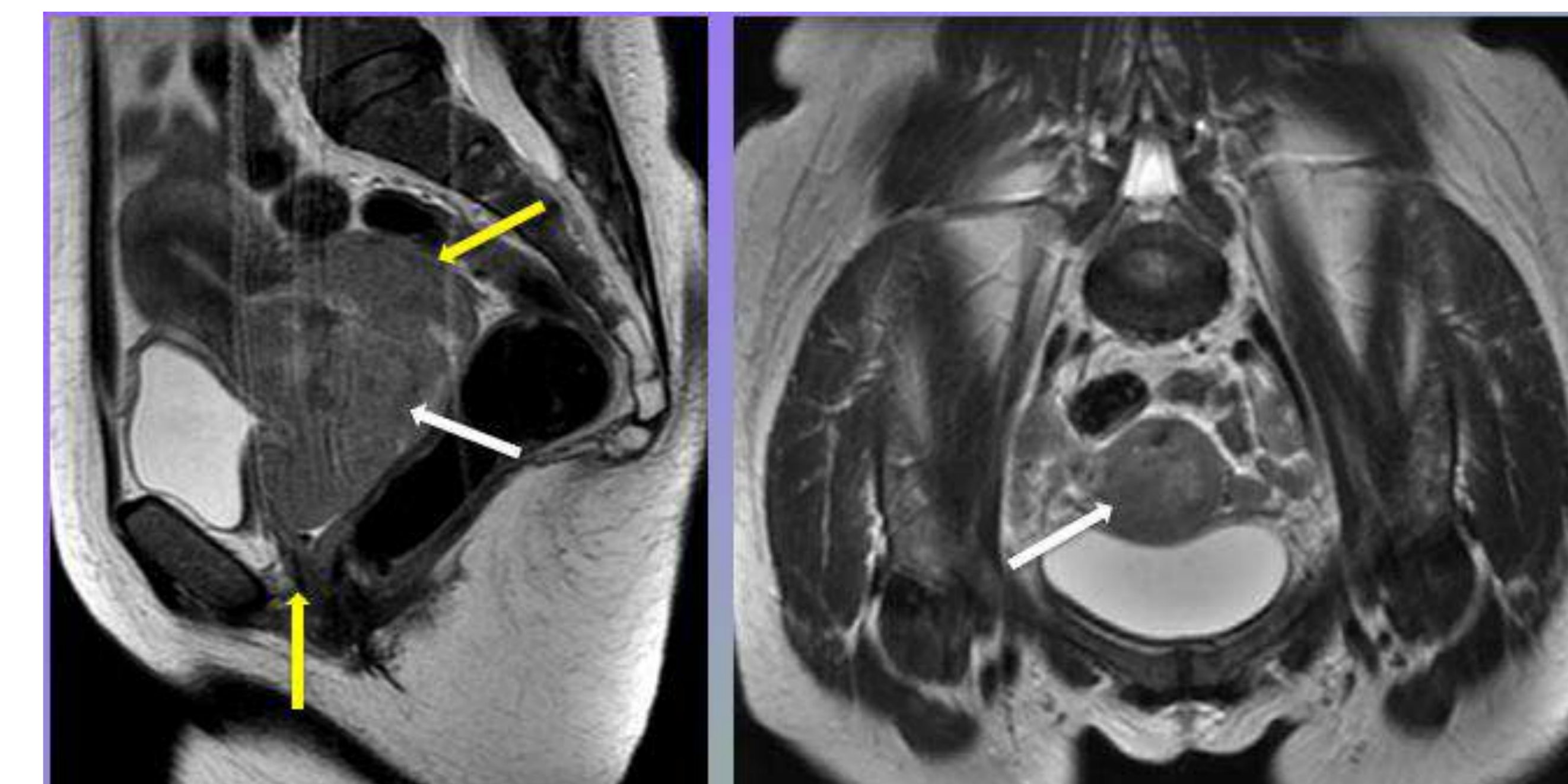


*Axial and sagittal T2-weighted MR image shows a cervical carcinoma (white arrow) with invasion of pericervical fat (black arrow) and nodular tumor extending into the parametrium - stage IIB*

**Fig.1**

*Axial and sagittal T2-weighted MR image shows a cervical carcinoma (white arrow) with invasion in the pelvic wall (yellow arrow) - stage IIIB*

**Fig.2**



**Table 2.** Estimation of Sensitivity and specificity for different parameters in cervical cancer by MRI

	Sensitivity	Specificity
<b>Parametrial invasion</b>	71%	94%
<b>Vaginal invasion</b>	100%	90%
<b>Pelvic wall extension</b>	71%	94%
<b>Urinary bladder invasion</b>	83%	100%

### Conclusions

According to the new staging guide, MRI allowed a more detailed assessment of morphological changes. It gave an accuracy of (96.5%) for better delimitation and staging of cervical cancer compared to the old staging guide (92.5%).