CONCORDANCE BETWEEN ROSE AND DEFINITIVE CYTOLOGICAL DIAGNOSIS OF BRONCHIAL BRUSHING IN PERIPHERAL LUNG NODULE STUDY

L. Mendez Mangas[a], N. Espejo Herrera[b], M. Diez Ferrer[a], P. Trias Sabria[a], A. Marin Muñiz[a], M. Hernandez Argudo[a], M. Plana Pes[a], N. Baixeras Gonzalez[a], S. Santos Perez[a], I. Catala Costa[a], R. Lopez Lisbona[a] (Mrs)

[a] Bellvitge University Hospital, Hospitalet De Llobregat, SPAIN
[b] Vic University Hospital, Vic, SPAIN

BACKGROUND

Diagnosis of peripheral pulmonary nodules (PPN) has improved with new endoscopic techniques such as navigation systems, thin/ultrathin bronchoscopes and radial EBUS. Bronchial brushing is one of the most used techniques for obtaining samples in these cases. Rapid "on site" cytological diagnosis (ROSE) has been validated in linear EBUS, but it is not routinely used for samples obtained by brushing. The objective of this study was to assess the concordance of the diagnoses of brushing ROSE, brushing definitive cytology and bronchial biopsy.

METHODS

Retrospective study including 100 consecutive patients under study for PPN in the Respiratory Endoscopy Unit of the Bellvitge University Hospital in 2020.

RESULTS

137 samples from 100 patients were analyzed. Most procedures were performed with a thin bronchoscope 77 (56.2%) and different techniques were combined to try to improve sample collection: ultrathin bronchoscope in 23 (16.85%), radial EBUS in 57 (41.6%), fluoroscopy in 27 (19.7 %) and navigation system in 13 (9.5%) depending on the PPN. Only 9 lesions were endoscopically visible, 6 by thin bronchoscope and 3 by ultrathin.

Brushing was performed in all cases. Biopsy (49) was only performed when brushing-ROSE was negative and the lesion was visualized by some method or when it was positive, but more sample was required for molecular markers.

The concordance between brushing ROSE and brushing definitive cytology was 89.1% (89% by flexible bronchoscope, 92.3% by thin bronchoscope and 78.3% by ultrathin). However, the concordance between brushing ROSE and bronchial biopsy was 35.8%. When comparing both concordances, no significant differences were found.
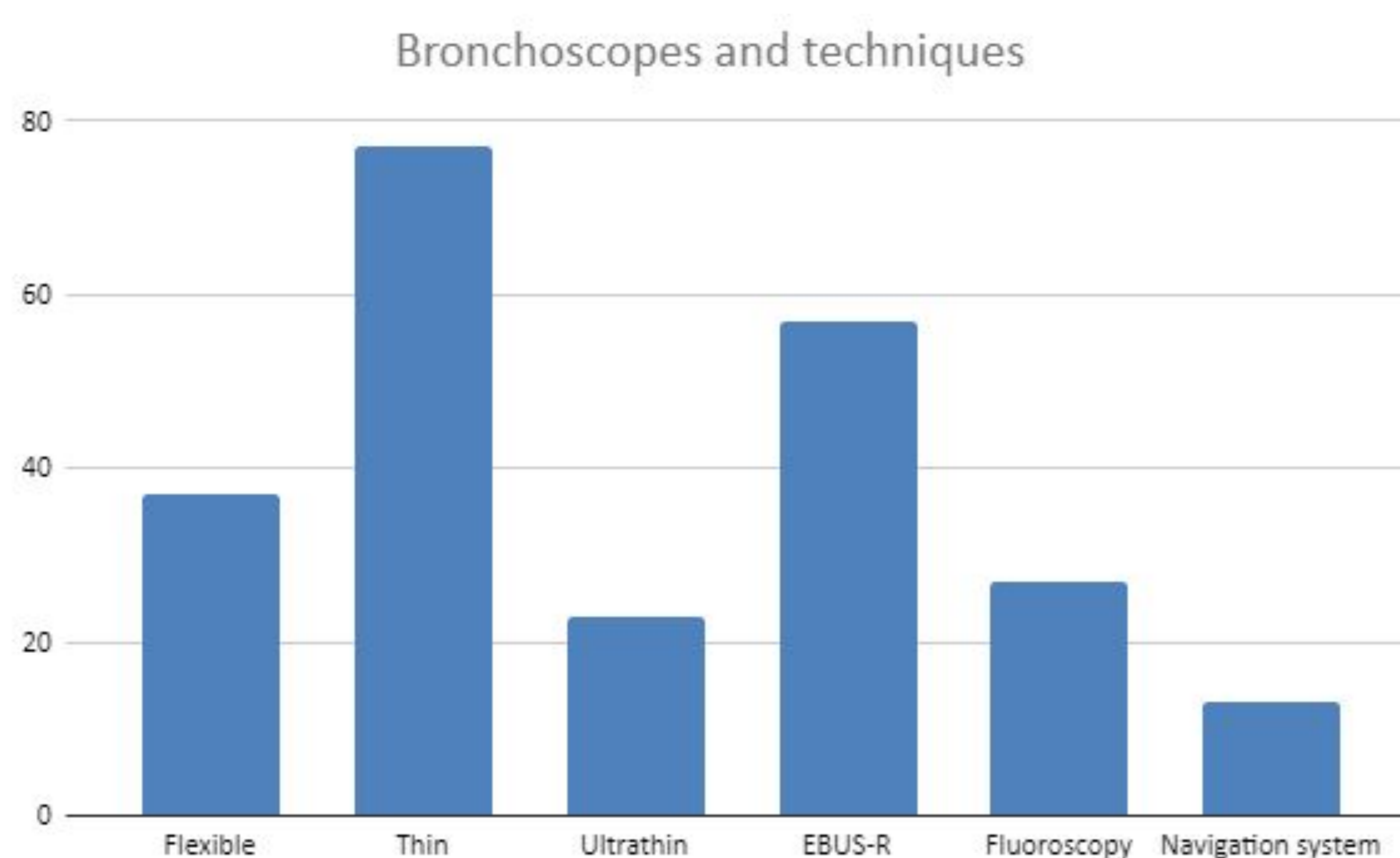

Figure 1: Bronchoscopes and additional used techniques.

Concordance n (%)	CBR	CBC	P valor
Flexible 37 (27%)	33 (89%)	10 (27%)	-
Thin 77 (56.2%)	71 (92.25)	34 (44.2%)	0.233
Ultrathin 23 (16.85)	18 (78.3%)	5 (21.7%)	0.923
Total 137	122 (89.1%)	49 (35.8%)	0.884

Figure 2. Concorde between brushing ROSE (CBR) and brushing definitive cytology (CBC)

CONCLUSION

Concordance observed between ROSE and brushing definitive cytology is high, regardless of the type of bronchoscope used. Including ROSE in the PPN diagnostic algorithm could improve performance and reduce procedure times. Prospective studies are required for confirmation.