How to manage multiple pure ground-glass opacities?

Especially with the ongoing screening programmes for lung cancer, ground-glass opacities (GGO) are increasingly recognised on chest computed tomography (CT). Differential diagnosis includes inflammation, fibrosis or neoplasm in a very early stage. In some instances, multiple GGO lesions are detected. Specific management has not been established yet. In this retrospective study, characteristics and long-term follow-up were studied in patients presenting with multiple GGO.

Methods
Over a 7-yr period, 73 patients were operated upon for bronchioloalveolar carcinoma (BAC). On preoperative chest CT scan, 23 patients (32%) had multiple pure GGO lesions. Patients with a single lesion or a solid component (so-called mixed lesions) were excluded. All pure GGO lesions >10 mm were resected regardless of location. Smaller lesions were not removed if they were centrally located or spread over different lobes, or when resection implied more than lobectomy. Clinical and pathological features were studied as well as different types of surgical resection and long-term follow-up. Patients were divided into two groups: in group I (n=5), all GGO lesions were resected; in group II (n=18), some lesions were surgically removed and some were followed up by serial CT examination.

Results
11 men and 12 women (mean age 57.2 yrs) were included. Only 8 patients (35%) had a history of smoking. Surgical procedures were: wedge resection in 12 patients; lobectomy in seven; lobectomy with wedge resection in three; and bilobectomy in one. A video-assisted thoracoscopic approach was used in 16 patients (70%). In group I, four patients had no recurrences and in one patient a new lesion was detected, subsequently resected and found to be an adenocarcinoma. In group II, GGO lesions disappeared in three patients or did not change in size in the remaining 15 patients.

Conclusion
When it is not feasible to remove multiple pure GGO lesions, regular follow-up with chest CT represents an alternative approach to surgical resection.

References

Editorial comment
In 1995 NOGUCHI et al. [1] introduced a new classification for small adenocarcinomas, subdividing them into replacement and nonreplacement lesions. Types A and B represent very early stages with an excellent long-term prognosis when surgically resected. On chest CT, these lesions usually present as pure GGO nodules with no solid component. These are increasingly recognised due to enhanced screening in high-risk populations. A new pathological classification for adenocarcinoma will be introduced in 2010 [2]. The term bronchioloalveolar carcinoma (BAC) will disappear completely, as it gave rise to much confusion due to different definitions used by radiologists, pathologists and thoracic surgeons. As with other tumours, very early lesions without signs of invasion will be called adenocarcinomas in situ. A new subcategory of minimally invasive adenocarcinoma is created when there is ≤5 mm invasion. Invasive adenocarcinoma is present when there is >5 mm invasion.

The present paper addresses the management of multiple GGO lesions, which are more frequently encountered. Interestingly, none of the GGO lesions progressed during follow-up, demonstrating their relatively benign nature. Moreover, it should be emphasised that this is a retrospective study in selected patients. In any instance the authors advocate close follow-up with chest CT every 3 months for the first 2 yrs and every 6 months thereafter. If the lesion grows or a solid component becomes apparent, giving rise to a mixed lesion, surgical resection is indicated as most of these nodules represent invasive adenocarcinomas. When the new classification becomes better known and applied internationally, prospective studies will hopefully provide more insight in the evolution of GGO nodules and their optimal management.

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Original article