counters—achieves the following:

- an axial field-of-view of 21 cm, which is 12 times larger than microPET;
- a 3-D submillimeter spatial resolution and therefore a volumetric resolution <1 μl, which is 8 times better than microPET;
- an absolute sensitivity of 8.9 Hz/kBq, which is 60% better than microPET;
- and a sensitivity, for a cat's-head phantom (5.5 cm diameter and 6 cm long), of 918 Hz/kBq/mL, which is 15 times better than microPET.

This HIDAC camera has provided imaging results that have been acclaimed by S. Cherry, the designer of microPET (personal communication, September 1997). The HIDAC camera has been in regular use at the MRC Cyclotron Unit at Hammersmith Hospital (London, UK) since February 1999, where quantitative biologic applications are being investigated. At Oxford Positron Systems, we have now delivered a commercial, quad-detector camera that provides a 3-fold improvement in sensitivity, a 5-fold shorter electronic dead time, and a maximum coincidence counting rate of 500000 Hz.

3-D HIDAC-PET cameras have existed for many years, and earlier work has been documented in this journal (*4*). The technology is well proven commercially, as hundreds of systems for autoradiography (InstantImager; Packard Bioscience, Downers Grove, IL) are in operation worldwide.

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Procedure Guideline for Gastric Emptying and Motility

TO THE EDITOR: The procedure guideline for gastric emptying and motility by Donohoe et al. (*1*) covers the field extensively and merits full attention. Solid and liquid test meals were extensively discussed, but the use of semisolid test meals was only treated as a side issue of minor importance and barely mentioned. Semisolid meals combine emptying characteristics of liquid and solid meals. The emptying of liquids depends more on pressure gradients between the stomach and duodenum and is more influenced by gravity than by muscular propulsion. The emptying of solid meals, however, is primarily influenced by the effectiveness of mastication, which in turn influences the duration of grinding within the antrum (*2*). This process is known to triturate food particles to a size of less than 1 mm, causing a lag period of variable duration before gastric contents are passed into the duodenum. The disadvantages of liquids and solids ingested separately or in combination may be avoided by the use of a semisolid test meal (*3,4*).

Donohoe et al. (*1*) asserted, "if a patient cannot tolerate the ingestion of a standard solid or liquid meal study, that the procedure should not be done." However, a semisolid meal could replace solid or liquid meals because its consistency is variable and may be adapted as required. Such meals exhibit the linear emptying characteristics of solid meals, particularly when their consistency is more stiff than liquid. When prefabricated, ready-made mixes are used, their preparation is simple and requires little time. Such commercially available products avoid the inconvenience of multistep cooking and offer additional advantages. They maintain the same nutritive density and osmolality, a constant fat–carbohydrate–protein ratio, and constant electrolyte and spice concentrations. Differences in these properties are known to influence the rate of gastric emptying (*5*). Fluctuations are likely to occur when multicomponent solid meals are individually prepared. Meals of vegetable origin are generally palatable, light, and easily digestible even in patients with digestive disorders. They are acceptable for vegetarians and should not elicit objections that are based on religious preferences or special dietary restrictions. These properties characterize semisolid meals as valuable intermediates between liquid and solid meals that should not be neglected when the choice of test meal is considered.

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Prognostic Value of FDG PET Imaging in Malignant Pleural Mesothelioma

TO THE EDITOR: We read with interest the article by Benard et al. (*1*), which illustrated the potential value of FDG PET imaging in patients with mesothelioma to indicate prognosis. This article provides an opportunity to highlight another specific role of FDG PET in patients with pleural thickening or pleural plaques needing a diagnosis. FDG PET, by its functional nature, provides information about metabolically active areas and may be used as a guide to the most appropriate area to biopsy for better yield. This use of the PET complements its other functions in oncology: diagnosis, staging, and grading of tumors; evaluation of residual masses; prognostication; and monitoring of response to treatment. In particular, for tumors that are infiltrative, spreading, or bulky, which may have variability in histology (ranging from cystic

necrosis to cellular atypia) in different parts of the same tumor, the choice of the most appropriate biopsy site may not be very easy from CT examination. Areas of increased bulk need not necessarily be areas of high metabolic activity. Tumors that may be expected to result in such a clinical situation include mesotheliomas, sarcomas, gliomas, multiple myelomas, and ovarian carcinomas. In mesotheliomas, it is notoriously difficult to obtain appropriate biopsy specimens.

This use of FDG PET became apparent in a recent patient who came to our center. A CT scan from a 60-y-old man showed extensive lobulated pleural thickening, which had previously been biopsied both percutaneously and by video-assisted thoracoscopy (VATS). The biopsy and VATS had proven to be nondiagnostic, although an adequate tissue sample had been obtained. A PET scan performed subsequently showed a moderate variable increase in FDG uptake throughout the right pleural region and mediastinum but with more active discrete areas near the right cardiophrenic angle and in the posterior pleura. Targeted biopsies of the right cardiophrenic angle subsequently yielded tissue that proved to be histologically confirmed mesothelioma. On this occasion, the use of FDG PET in combination with CT provided information on the optimum site to biopsy, and, as suggested in the article by Benard et al. (*1*), mesothelioma had high uptake that contrasted with the lower uptake changes elsewhere.

It is not uncommon with pleural malignancy to find diffuse changes, but with only local areas of malignancy. FDG PET can be used to direct the surgeon to the site most likely to yield a positive biopsy when correlated with anatomic imaging information. Occasionally biopsies fail or are clinically contraindicated, and FDG may be useful to provide a "metabolic biopsy." Evaluation of this combination (i.e., FDG PET together with conventional imaging) and its relative sensitivity, specificity, and cost-effectiveness in selected patients may be highly relevant.

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