

## Teaching and credentialing in France

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Scientific publications in the field of endoscopic ultrasonography are raising up since the last 20 years. In a recent paper, the number of articles devoted to EUS between the earliest 1980 and

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2002 reached 1259 papers published in 65 journals [1]. The peak of the rate of publications per years seems to be reached in 1998. Out of the 1259 articles, 198 (15.7%) were related to diseases of the biliary tract or the pancreas, either benign or malignant. In the same period, the number for indications of EUS investigations grew dramatically. In France, 48 039 EUS were performed in 1999 [2]. In USA, some authors have recently suggested that the currently available EUS resources are not sufficient to meet the hypothetical demand [2]. Therefore, the authors concluded that Endoscopy units able to perform EUS and programm trainings have to be increased [3]. The number of EUS seems to be still growing up in endoscopy unit recently equipped with EUS [4].

### Learning curve of EUS and training program

Although EUS appears to be a useful tool with a sufficient scientific background, it is reputed to be an operator-dependent procedure with a long-learning curve. The value of EUS is directly proportional to the training, skill and experience of the endosonographer. In a recent series, the lowest annual number of examinations requested per year might be around 200–250 procedures [4]. This estimation is not so far from that found in ERCP series ranging from 200 to 350 procedures per year [5,6]. It is probable that the learning curve of EUS is close to that of therapeutic ERCP, corresponding to one of the most difficult and constraining endoscopic technique learning. Sivak thought the acquisition of EUS competence to require a minimum 6 months training period in a center performing at least 300 procedures per year [7]. The guidelines of the American Society for Gastrointestinal Endoscopy (ASGE) recommended a minimum of 125 procedures supervised to achieve competence in the diagnosis of mucosal or submucosal abnormalities [8]. For achieving competence in all the fields of EUS, they recommended a minimum of 150 supervised cases, 75 of them being devoted to pancreaticobiliary diseases and 50 to FNA [8]. In another study from ASGE, 115 American respondents to a direct mail survey sent to member of the ASGE, performed a median number of 200 procedures per year and trained an average of 0.4 advanced fellows [9]. Thus, the actual offers for EUS training seems to be insufficient for providing an adequate competence. Many studies have yet confirmed the importance of the learning curve to improve the EUS accuracy. The accuracy of EUS staging of esophageal cancer was significantly improved over an 8-year period for T staging from 64 to 90% but not for N staging [10]. Considering pancreaticobiliary diseases, a series reported the influence of training on accuracy of EUS-guided FNA of pancreatic masses [11]. After a short training period (2 months), there was a significant improvement in EUS-FNA accuracy from 33% to 91%. Even if the exact type and modalities for EUS training remained to be determined, the usefulness of a period of training in a center performing more than 200 procedures per year is confirmed.

### What is the actual way for learning EUS in France ?

In France, EUS diploma has been instituted since 1993. The location of this course was in Paris with theoretical course during four weeks and 20 one-day sessions for practicing with an EUS



Fig. 1 EUS training in live pigs.

expert. The examination procedure consisted in 4 written questions and one to four EUS movies to describe and analyse. Evaluation of this EUS course was performed in 2000. Over the years 1995–1999, 57 questionnaires were answered among 147. Two third of the trainees had done EUS before the diploma. The trainees enjoyed theoretical courses, videosession and clinical practice but they asked for simulator training, and videolibrary. At least, 91% would recommend the diploma. After the diploma delivery, 22% of the trainees had no EUS activity, 23% performed EUS between 5 and 10/month and 55% in more than 10/month. A new course for learning EUS has been created in Marseille since 2004. This course is devoted to certified gastroenterologists at least two years after GE certification with EUS equipment available speaking or understanding French (France, Canadian, Belgium, Morocco, Algeria, Tunisian...). Teachers were recruited among French experts in the field of EUS, oncology, pathology, surgery, radiology. Special care was given for the teaching of EUS relationships with anatomy, oncology, pathology and radiological features of GI diseases. Teachers were asked to include a lot of pictures and video during their presentation and CDrom including all the presentations were delivered to all the trainees at the end of the course. The teaching organization included 3 weeks of theoretical courses and one week for practical learning with simulator (symbionix), live EUS sessions and one day of interventional EUS on live pigs with Fuji and Pentax echoendoscope). The session with live pigs allowed the trainees to practice FNA, celiac neurolysis, insertion of guidewire in a cyst through the gastric wall (Fig. 1). The examination procedure consisted with 2 short written questions and 2 videoclips to interpret and comment.

## Conclusion

EUS training is a priority choice since EUS is considered as an operator-dependent procedure with a long-learning curve. Theoretical courses with video sessions, simulator sessions or live sessions on animal models have to be provided for trainees.

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