month after TIPS, esophageal varices were still present in 3/10 (30% p=0.005), congestive
gastroscopy in 6/10 patients (60% p=1), whereas no patient had ascites (p=0.21). VCE still
showed small bowel lesions in 7/10 patients (p=2.21). CONCLUSION: In our study VCE
allowed the identification of small bowel lesions in all patients with portal hypertension.
TIPS effectively reduces presence and severity of esophageal varices, but the reduction of
small bowel lesions, congestive gastropathy and ascites was not significant, possibly due to
the small patient series. The role of differing post-TIPS intervals should also be evaluated.

Tu1203
First Study With a MGCE Simulator: Is There a Benefit of Chromoendo
oscopy in Magnetically Guided Capsule Endoscopy?
Stefan Foertsch, Henrik Keller, Philip W Mewes, Rainer Koth, Heinz Woern, Thomas
Reichardt
Background: In conventional endoscopy one of the most important methods for visibility
enhancement of metaplasia and dysplasia mucosa is chromoendooscopy. It has been proven
to significantly enhance the visibility of mucosa irregularities. In 2010 the Magnetically
Guided Capsule Endoscopy (MGCE) was introduced (Rey, 2010). A small endoscopic capsule
is swallowed by the patient and navigated by an external magnetic field in a water filled
stomach. For the MGCE a virtual reality simulator was developed that can be used as a
versatile tool for training and scientific (pre-)studies. Aim: To extend the new MGCE virtual
reality simulator with chromoendooscopy to investigate benefits for the MGCE and to evaluate
the use of the extended simulator for scientific (pre-)studies. Methods: Texture generation
methods and image filters were used on images from conventional endoscopy and from pig
stomach experiments in order to create virtual mucosa textures with methylene blue dyeing.
The results were additionally enriched with pathologies which include the characteristic
appearance of diseases in chromoendooscopy. The textures were placed on a 3D stomach
model which is used in the MGCE virtual reality simulator. Fifteen 3D virtual examinations were
performed in repeated trials with the new textures and compared with examinations with a normal
texture which has no blue dyeing but the same pathologies. Results: The normal texture of the 3D
stomach model can be replaced by textures with methylene blue dyeing. For both kinds of
textures a number of pathologies were created, which can be positioned freely in the stomach
model. This allows the same MGCE examination to be done with and without the help of
chromoendooscopy. The parameters of the dyeing can be changed, such as the amount of
methylene blue applied to the mucosa and a spatial distance between different anatomical
parts of the stomach. Repeated trials showed promising results in detecting mucosa irregulari-
"ties comparable to conventional chromoendooscopy in a MGCE simulator. Conclusions: The new
virtual reality simulator proved to be a useful tool in conducting a first study on the concept
of chromoendooscopy in MGCE. The results allow the training of this screening method.
The method itself appears promising for future clinical studies. Its advantages for
detecting mucosa irregularities in conventional endoscopy were reproducible in virtual
reality for the MGCE.

Tu1204
Fluorescein Transport is Decreased in Colon Cancer Cells: Implications for
Confocal Endomicroscopy
Rajeev Prabaharan, Eladio Rodriguez-Diaz, Luis J. Jepel, Satish K. Singh
Background: Classically, IV-fluorescein-based confocal laser endomicroscopy (CLE) reveals
fluorescence as “dark cells” with an extremely low cytoplasmic fluorescence compared to normal
epithelium. Intracellular pH-dependent quenching of fluorescein (FL) fluorescence has been proposed
to explain this phenomenon, but is unlikely in the range of physiological intracellular
pH. Indeed, because FL is an anion we hypothesized that “dark cells” might be better explained
by differences in FL uptake in dysplasia/cancer. Aim: To assess in Vivo whether differences in FL
transport processes determine intracellular FL content in normal vs. cancer cell lines.
Methods: Dyes: Dyes: Dextrorotatory (D) and levorotatory (L) isomers of fluorescein bound and
quenched fluorophore. Within the backbone lie cleavage sites for the MMPs. Upon cleavage the
quenching is released and after excitation fluorescence is emitted revealing the activated MMP
bound and quenched fluorophore. The sections were then examined under a fluorescent microscope with near infrared filters. Probe activation could be seen as discrete
fluorescent spots which have been seen in pre-malignant BE lesions, making the probe an interesting candidate for the
clinical setting. However, current MMPs assays do not discriminate between pre-malignant and malignant neoplasms.
Conclusion: To evaluate fluorescence from colonic tissues, a sensitive and specific
probe needs to be developed. This study will provide the basis for such a probe.

Tu1205
The Utility of Quantitative Endoscopic Ultrasound Elastography for the
Diagnosis of Solid Pancreatic Masses
Muhammad F Dawwas, Hatim Taha, John S. Leeds, Manu N. Nayyar, Koli W. Oppong
Introduction: Recent data suggests that endoscopic ultrasound (EUS) elastography, a novel
technique that allows real-time quantification of tissue stiffness, can accurately differentiate
benign from malignant solid pancreatic masses (1). External validation of the diagnostic
utility of this technique has not been reported. Methods: We carried out quantitative EUS
elastography on 31 consecutive patients with EUS-proven solid pancreatic masses using the
linear Hitachi EUB-7S00. Multiple quantitative elastographic measurements of the mass
lesion (A) and soft tissue references areas (B) were undertaken in each patient and the
corresponding strain ratios (BA) were calculated. Final diagnosis was based on EUS-fine
needle aspiration cytology and/or resection specimen histology. The diagnostic accuracy of
elastography in detecting malignancy was calculated using receiver operating curve
analysis. Results: The mean lesion size was 27.6 (SD 9.8) mm. The final diagnoses were pancreatic adenocarcinoma (n=24), inflammatory mass (n=5) and neuroendocrine tumor
(n=2). Both strain ratio and pancreatic mass elasticity were significantly higher among patients
with pancreatic malignancy tumors compared with those with inflammatory masses. However, the sensitivity, specificity, accuracy and area under the receiver operating curve of EUS
elastography for correctly diagnosing pancreatic malignancy in our cohort (table 1) were less
favorable than those reported recently, with lower mean strain ratio (4.62 vs. 6.04) and
higher pancreatic mass elasticity cutoffs (0.28 vs. 0.09) providing the highest accuracy.
Conclusion: Quantitative EUS elastography is a promising tool for the differential diagnosis
of solid pancreatic masses although its accuracy in our experience has been less than
recently reported. Further assessment of the utility of this technique in other cohorts is
warranted. References: 1. Iglesias-Garcia J, Lerno-Neta J, Abdulkader I, Forteza J, Dom-
goinguez-Munoz JE. Quantitative confocal fluorescence endomicroscopy: an accurate method

Tu1206
Probes Pointing the Way: Fluorescent Molecules as Aides in Barrett’s
Endoscopy
Aleku L. Davilaar, Wyseke Westra, Kaushla K. Krishnadath, Paul Fockens
Barrett’s esophagus (BE) is a pathologic condition of the esophagus where chronic gastroeso-
phageal reflux leads to transformation of squamous into an intestinal-type of epithelium.
This intestinal-type metaplasia (IM) can consequently stepwise develop into severe dysplasia
and ultimately esophageal adenocarcinoma (EAC). The number of BE patients that actually
acquire EAC is very small, approximately 0.5 to 1%. Nonetheless, people with BE still have
a risk of as much as a 100-fold higher of developing EAC compared to the general population.
To ameliorate this risk, BE patients are entered into surveillance programs which are based on
endoscopy surveillance with the concurrent taking of biopsies followed by histopathological
staging. However, even upon following strict surveillance guidelines, dysplastic patches and
early cancer lesions can be missed. Techniques for a more accurate detection of premalignant
lesions are thus sorely needed. In this respect the protease activatable fluorescent probe
MMPSense is of interest as its activating enzymes, the matrix metalloproteinases (MMPs),
are considered important players in the process of neoplastic progression. In cancer they
play a role in invasion and metastasis and also in general tumor progression and growth.
The MMPs are often upregulated in cancer, a fact also seen in EAC. Upregulation has also been
seen in pre-malignant BE lesions, making the probe an interesting candidate for the
detection of dysplasia and early cancer in BE. Aim: To evaluate if MMPSense can identify
dysplastic and cancerous lesions in BE. Method: MMPSense contains a peptide backbone
bound and quenched fluorophore. Within the backbone lie cleavage sites for the MMPs.
Upon cleavage the quenching is released and after excitation fluorescence is emitted revealing
the tissue localization and quantity of the protoestes of interest. The probe is excited by and
emits fluorescence in the near infra-red spectrum which in Vivo leads to less signal loss. To
test the activity of MMPSense we have incubated the probe on tissue sections of normal
squamous epithelium and tissues which span the pathologic sequence of BE, including non
dysplastic, dysplastic and cancerous lesions. The sections were then examined under a
fluorescent microscope with near infrared filters. Probe activation could be seen as discrete
fluorescent signals, which could be counted. Results: Comparing tissues from a total of 8
patients with IM and 11 patients with EAC with coupled normal squamous tissues, there
was a higher probe activation signal count in the aberrant tissues (figure 1). Future directions
ex-vivo MMPSense discriminates between normal and aberrant tissues in BE. The next steps are
to validate whether this probe is able to more accurately detect dysplasia and early cancer as
these are the most difficult types to detect during regular endoscopy.

Tu1207
Three-Dimensional Optical Coherence Tomography Assessment During
Radiofrequency Ablation in Barrett’s Esophagus Reveals Depths of Tissue
Destruction and Potential Areas of Residual Glands
Tao Dong, Hán Tien, Chao Zhan,bor, Jianhui Lu, Takumishima, Yanzui K. Tao, Osman M. Ahlén, Marisa Figueiredo, Desmond C. Adler, Joseph M. Schmitt, Qin Huang, James G. Fujimoto, Hiroshi Mashimo
BACKGROUND/AIMS: Three-dimensional (3D) endoscopic microscopy using optical coherence
tomography (OCT) is a promising method to real-time evaluate areas before and after radiofrequency ablation (RFA) of Barrett’s esophagus. Presently, patients routinely require
follow up endoscopy examination six to eight weeks after their ablative therapy and often
require repeat treatments to achieve complete treatment response. Present 3D-OCT allows
near-microscopic surveillance including submucosal tissue structural changes over broad areas
during ablation therapies through the biopsy channel of standard endoscopes and may be
uniquely suited to assess treatment efficacy provide real-time feedback for treatment dosing,