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New diagnostic tools in DIGESTIVE ENDOSCOPY and a new patient care approach: PROBE CONFOCAL LASER ENDOMICROSCOPY (PCLE)

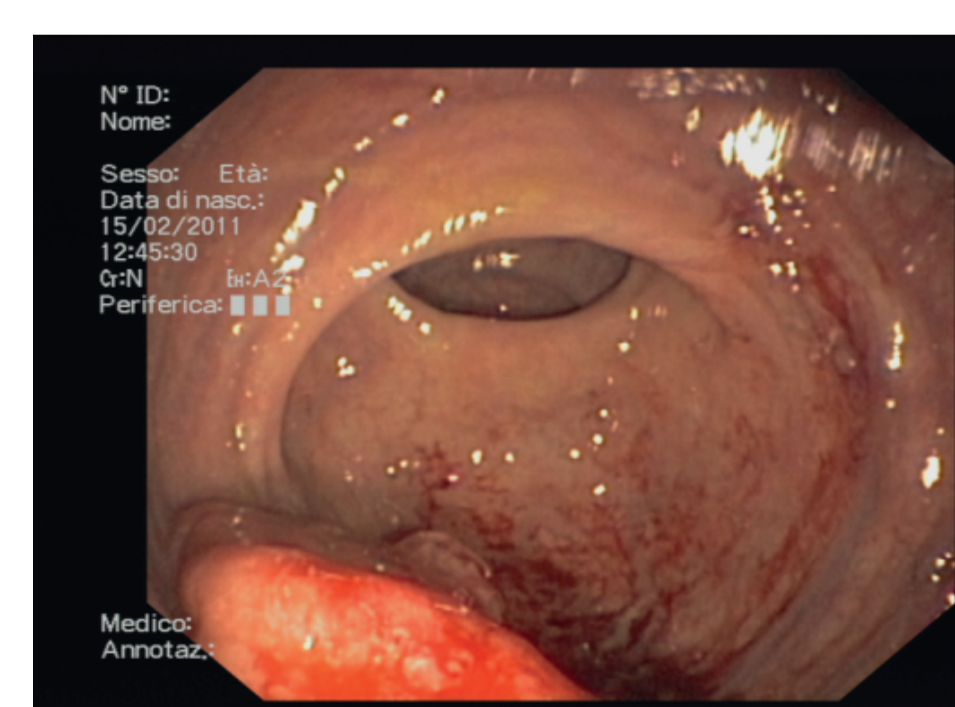
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INTRODUCTION

Digestive endoscopy is characterized, more than any other specialties, for the use of high-tech equipment. The introduction of advanced endoscopic techniques has greatly improved diagnosis and therapeutical interventions.

As a consequence, a collaborative approach of endoscopy nurse personnel and implementation of changes are needed for a high quality patient care. PCLE is a novel imaging technique in digestive endoscopy providing in vivo visualization of epithelia and blood vessels of the mucosa of the digestive tract at subcellular level.

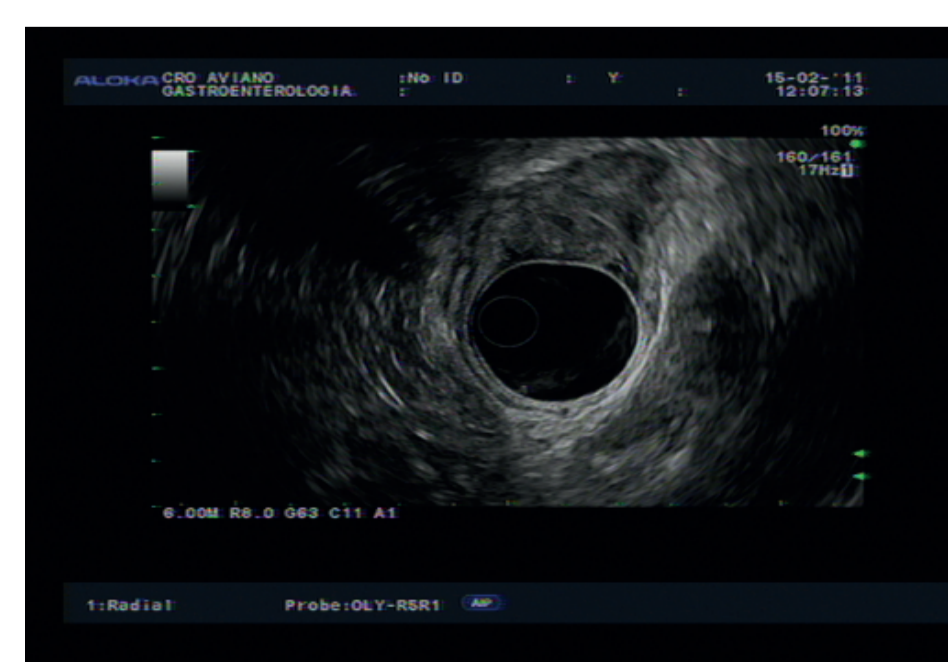
PCLE shows promising applications in neoplasia detection with targeting of biopsies and evaluation of neoangiogenesis in colo-rectal and gastric cancer in order to predict usefulness of antiangiogenetic therapy. With the introduction of PCLE implementation of changes in the patient care setting are advocated to maintain high standards of safety of patients in Endoscopy Units.



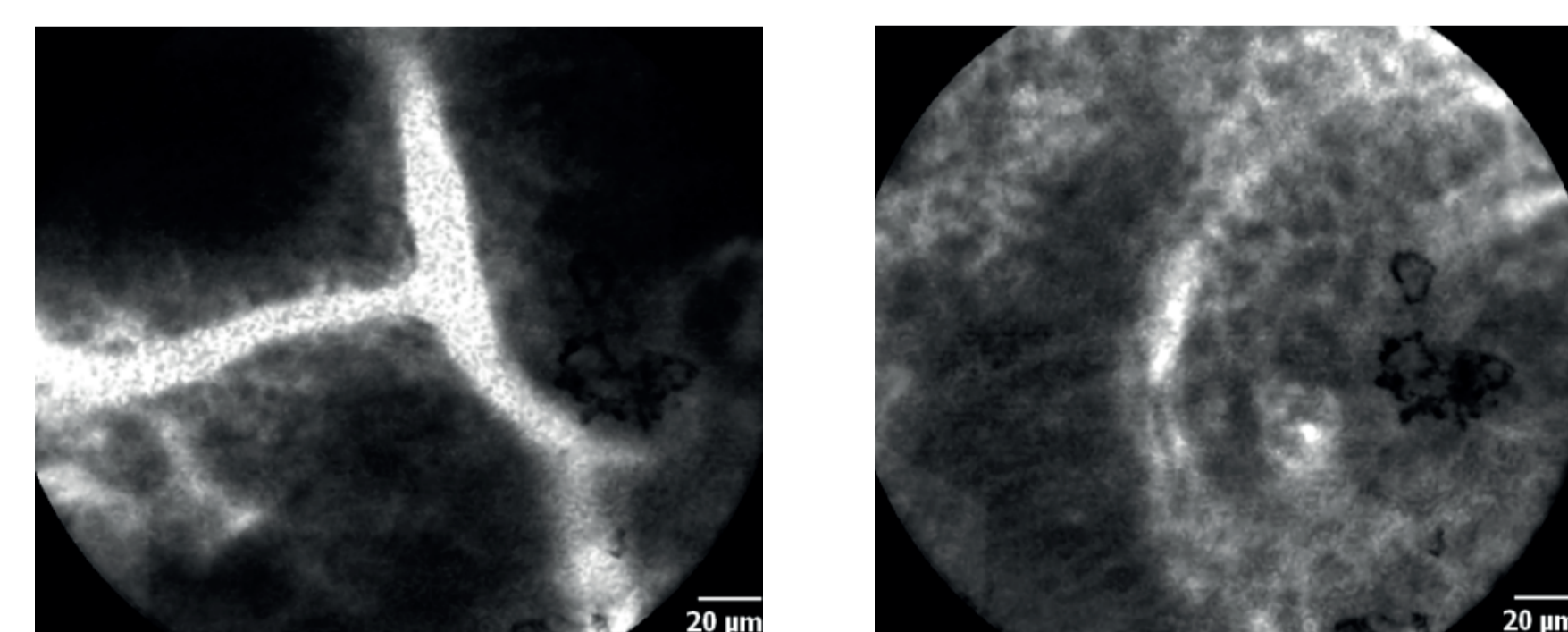
Endoscopic and ultrasound images of pre-and post-therapy CRC patient



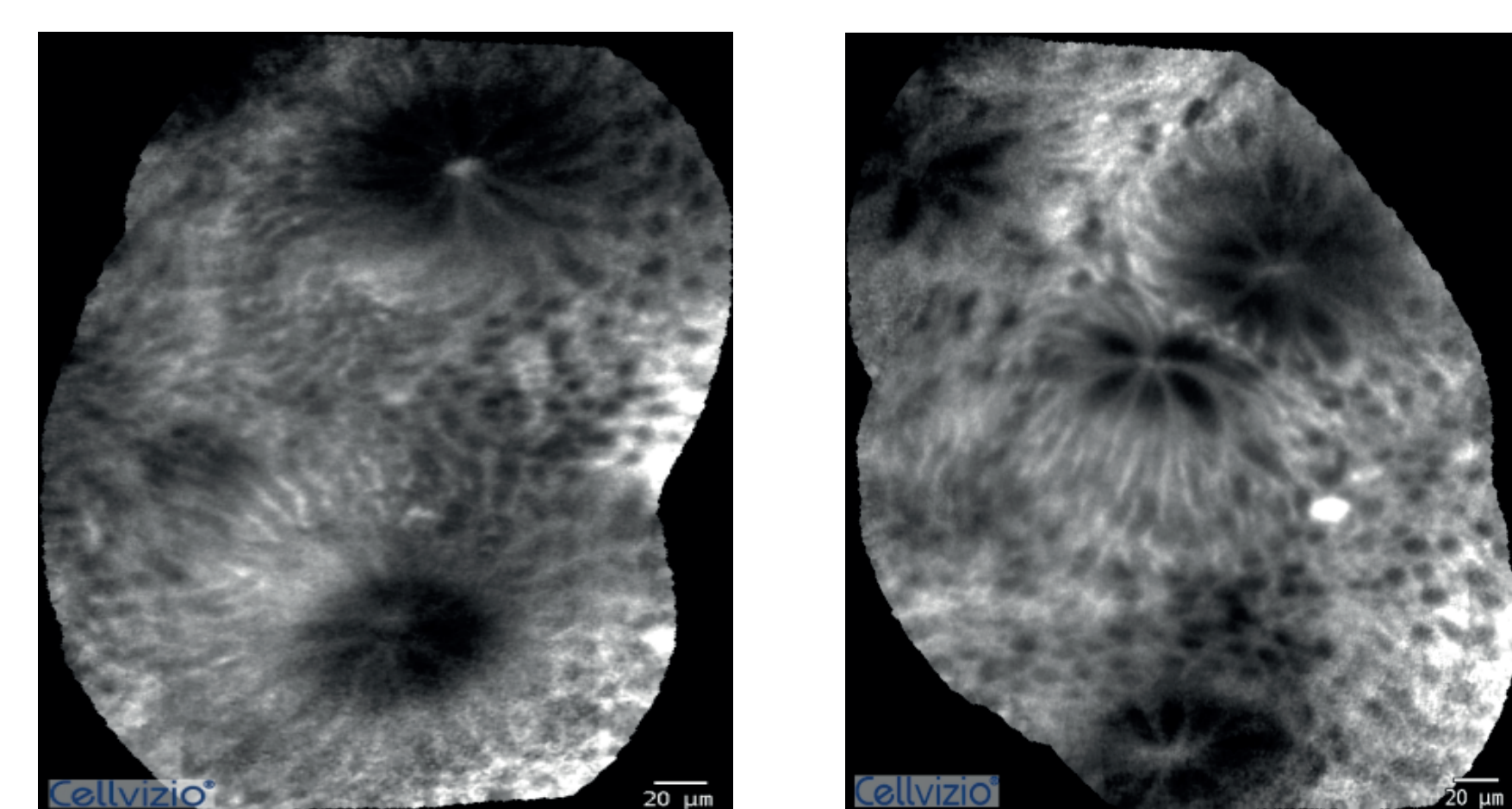
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Representative images of the pCLE analysis of the intratumoral blood vessels of pre-and post-therapy CRC patient



MATERIALS AND METHODS

Revision of literature and of technical equipment, identification of new protocols for the new patient care needs (revision of coordination of a multi-functional team, adequate planning of endoscopic activities, introduction of a regional check-list).

LA SICUREZZA DEL PAZIENTE NELLA CHIRURGIA AMBULATORIALE E NELLE PROCEDURE INVASIVE	
VERIFICHE PREPROCEDURA	MONITORAGGIO PARAMETRI VITALI PERIPROCEDURA
Nome _____	DATA _____
Cognome _____	PA _____
Causa di ricovero _____	PC _____
Diagnosi _____	SpO ₂ _____
Intervento _____	Tabusi _____
Struttura/Tale Ob. _____	
DATA _____	
Verificare la corrispondenza tra l'identità del paziente, l'intervento proposto ed il programma operatorio	Completare chirurgico con relativi espletamenti e ricovero, motivato (compreso identificativo del paziente, descrizione del campione e sigla operatore)
Obtenuto il consenso informato chirurgico	Parametri vitali
Obtenuto il consenso informato anestesico	SpO ₂ 95% pre-procedura
Validato il rischio di reazioni allergiche	SpO ₂ 95% in sala operatoria
Mancato il sito chirurgico	SpO ₂ 95% alla fine della procedura
Validata eventuali situazioni cliniche rilevanti	SpO ₂ 95% alla fine della procedura
Le immagini diagnostiche sono state visualizzate	SpO ₂ 95% alla fine della procedura
Verificato il funzionamento di dispositivi, principi, apparecchiature e la disponibilità dello strumentario sterile necessario all'intervento	SpO ₂ 95% alla fine della procedura
Verificata antibioticoprofilassi (come da protocollo aziendale)	SpO ₂ 95% alla fine della procedura
Verificata procedura, sito d'intervento e corretto posizionamento del paziente	SpO ₂ 95% alla fine della procedura
Firma Infermiere _____	Firma Medico _____

Check-list

The introduction of CLE has led to modification in the following areas:

- **Structure:** longer procedure times for equipment, contrast dye and drug preparation, patient intra-procedural monitoring, reprocessing procedures of endoscopes and accessories.
- **Patient care:** patient identification, monitoring of heart beat, blood pressure and oxygen before, during and after the procedure, prevention and management of possible side effects of contrast dye and procedure related complications.

RESULTS

PCLE is an endoscopic imaging technique which allows visualization of mucosa at a resolution of 1 micron and visualization of cellular, subcellular structures and blood vessels providing not only histological diagnosis in vivo but also evaluation of neoangiogenesis and response to antiangiogenic treatment.

27 patients with rectal cancer were examined in our Gastroenterology Unit. Neoangiogenesis was evaluated using the "Cannizzaro-Spessotto scale" useful in predic-

ting response to anti-angiogenic therapy. Endoscopy nurse personnel must be aware that longer procedure times necessitate adequate planning.

The use of a contrast dye administered intravenously (fluorescein) leads to the planning of checks and intra-procedural observations for the correct management of possible side effects, such as anaphylactic shock. We did not report no local nor systemic adverse events during the procedures.

The endoscopy nurse has also a fundamental role in giving pre-procedural information to the patient on the new medical equipment.

CONCLUSIONS

The introduction of the PCLE has a significant impact on the role of the endoscopy nurse both in patient care and structure organization.

In Endoscopy Units nurse personnel has a fundamental role in patient safety, equipment preparation and planning daily activities for a high quality patient care and patient satisfaction.

Structure organization must be revised according to procedure timing and the involvement of different departments (Endoscopy unit and Anatomopathology Unit).

