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The management of malignant polyps in colorectal cancer screening programmes: A retrospective Italian multi-centre study

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ABSTRACT

Background: Although recognition of colorectal malignant polyps is increasing, treatment plans lack the evidence of randomised trials.
Aim: To retrospectively evaluate presentation, management and outcomes of screen-detected colorectal malignant polyps, with special focus on the role of histological factors in therapeutic decision-making.
Methods: We retrospectively analysed data regarding malignant polyps detected during faecal immunochemical test-based screening programmes in five centres in North-Eastern Italy between April 2008 and April 2013.
Results: 306 malignant polyps in 306 patients were included; 72 patients underwent surgery directly (23.6%). Of 234 patients treated endoscopically, 133 subsequently underwent radicalisation surgery (56.8%) and in 17 there was evidence of residual disease (12.8%). Involved, unsafe (<1 mm) or invaluable resection margins and sessile morphology represented the most frequent determinants of subsequent surgery. The mean number of nodes harvested during radicalisation surgery was 7.1 ± 6.4 (range 0–29). Histological diagnosis was re-evaluated according to new guidelines in 125 cases (41%); in 18 this led to modification of the risk class (14.4%).
Conclusions: Although the rate of surgical treatment following endoscopic resection is similar to other studies, residual disease at surgery was lower than most international series. Adhering to the new histological reporting system and respecting guidelines on node harvesting may favourably influence prognosis.

1. Introduction

Colorectal malignant polyps (T1 tumour, according to TNM classification) are cancerous polyps that have invaded the sub-mucosal layer.

The diffusion of bowel cancer screening programmes has determined the increased detection of these less advanced forms of the tumour.

Therefore, there is growing awareness by both clinicians and pathologists regarding the diagnosis and management.

Traditionally, malignant polyps have been considered low risk and therefore safely treatable by means of endoscopic resection alone if: (a) the lesions were not poorly differentiated; (b) there was no vascular or lymphatic invasion; (c) the margins of excision were not involved [1,2]; (d) an en-bloc polypectomy was performed [3].

More recently, a European panel has issued new guidelines in colorectal cancer (CRC) screening and diagnosis. Regarding the histological judgement of malignant polyps, new features such as budding and micro-staging have acquired significant weight [4].

Up to now, no controlled trial has compared endoscopic treatment alone with endoscopic + surgical treatment in the management of these lesions.

In this study, we report the results of a multi-centre study of malignant polyps diagnosed during CRC screening programmes.

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Presentation, endoscopic and surgical management and follow-up are analysed.

A special focus has been given to residual disease at surgery following polypectomy and to the role of histological factors in determining decision-making, including a re-evaluation of endoscopic samples by dedicated pathologists.

2. Materials and methods

We retrospectively evaluated data on all consecutive colorectal malignant polyps detected during screening programmes between April 2008 and April 2013 in five centres of North-Eastern Italy: Trento, Rovereto (Trento), Padova (Ospedale Sant'Antonio), Bassano (Vicenza) and Feltre (Belluno).

All involved screening programmes following the protocol of total colonoscopy in subjects of both sexes, aged 50–69 years, who tested positive for faecal immunochemical occult blood test (FIT).

A standardised case record form was sent to all participating centres. Demographic and baseline clinical features, endoscopic characteristics of the lesions, original histological diagnosis, management and follow-up have all been collected.

The following comorbidities were considered relevant: diabetes mellitus, significant cardiovascular and respiratory conditions, chronic kidney disease, chronic liver disease, present or previous malignant tumours, and degenerative neurological conditions.

Residual disease was defined as the presence of any residual carcinoma at the site of polypectomy or in the nodes, or both.

Recurrence of disease was defined as the presence of locally or regionally recurrent disease or distant metastases after a curative resection.

A minimum follow-up of 18 months was required for all patients, to achieve a valuable judgement of recurrent disease. Longer follow-up periods, when available, allowed an evaluation of surveillance recommendations.

Single centres have followed local clinical protocols and no "a priori" attempt to homogenise clinical behaviour has been made.

According to the timing of diagnosis, classification into low- and high-risk lesions has changed from the traditional approach [1,2] to a more modern one based on new guidelines [4]; consequently, the histological reporting form of endoscopically resected lesions has changed. For this reason specialised pathologists re-evaluated the cases previously enrolled.

2.1. Statistical analysis

Categorical variables were reported as numbers and summarised as proportions; continuous variables were expressed as means ± standard deviation (SD). Statistical comparisons were performed using Student's *t* test (comparisons between two groups) or one-way ANOVA (comparisons amongst three groups) for continuous variables (age, size of the lesions, number of nodes resected). Chi-squared test was used for categorical variables (gender, site distribution and morphology of the polyps, histological items involved in therapeutic judgement, rates of direct and radicalisation surgery). A *p* value of less than 0.05 was considered to represent a statistically significant difference.

2.2. Ethical approval

A recently published Code of Clinical Research (National Code on Clinical Researches) [5] declared that retrospective archive studies do not need ethics approval. According to the Declaration of Helsinki, every precaution was taken to protect the privacy of the subjects involved and the confidentiality of their personal information.

3. Results

In the five-year period under consideration, there were a total of 14,943 FIT-positive subjects. Of them, 13,588 underwent colonoscopy (adhesion rate: 90.9%).

A total number of 306 malignant polyps in 306 patients were observed.

One hundred and ninety-three patients (63%) were male. The mean age was 63.1 ± 6.2 years (range 50–69).

Seventy-two cases were referred for direct surgical intervention (23.6%). The indications for direct surgery were: size of the lesion in 26 (36%), depressed morphology in 23 (32%), no-lifting sign in 6 (8%), and technical problems during resection in 6 (8%). Information is missing in 12 cases (16%).

Two hundred and thirty-four cases were resected endoscopically (76.4%) and 133 of these were referred for radicalisation surgery (56.8%).

Table 1 reports the demographic, clinical and endoscopic features of patients undergoing direct surgery, endoscopic resection

Table 1
Baseline characteristics of malignant polyps.

	Endoscopic resection only *n* = 101	Radicalisation surgery *n* = 133	Direct surgery *n* = 72	Total *n* = 306	*p* value
Gender					
Males	68 (67%)	83 (62%)	46 (64%)	197 (63%)	0.735[a]
Females	33 (33%)	50 (48%)	26 (36%)	109 (37%)	
Mean age (±SD[#])	63.1 (±6.9)	63.0 (±5.7)	63.1 (±5.3)	63.1 (±6.2)	0.987[b]
Comorbidities					
0	76 (75%)	100 (75%)	53 (74%)	230 (75%)	0.979[a]
1	12 (12%)	19 (14%)	9 (12%)	40 (13%)	
≥2	5 (5%)	4 (3%)	3 (4%)	12 (4%)	
Missing data	8 (8%)	10 (8%)	7 (10%)	24 (8%)	
Site					
Right colon	10 (10%)	20 (15%)	30 (42%)	60 (20%)	<0.001[a]
Left colon	58 (57%)	83 (62%)	31 (43%)	172 (56%)	
Rectum	33 (33%)	30 (23%)	11 (15%)	74 (24%)	
Mean size	15.8 mm (±8.0)	19.2 mm (±9.0)	37.5 mm (±17.9)	22.4 mm (±10.5)	<0.001[b]
Morphology					
Sessile/Flat	30 (30%)	97 (73%)	66 (92%)	193 (63%)	<0.001[a]
Pedunculated	71 (70%)	36 (27%)	6 (37%)	113 (37%)	

[a] Chi-squared.
[b] One way ANOVA.