RESULTS

RESULTS

A total of (45) patients were available for the study, (24) patients were males (53.28%) and (21) were females (46.62%) (Fig. 15).

The age range was (from 18 to 69) years with the mean age of (39.4ys) and the 3rd decade (31-40 ys) shows the high peak (24.24%) (Fig. 16).

Table (1): Age incidence :

Age range	Number	Percentage
0 - 20 y	3	6.66%
21 - 30 y	8	17.76%
31 - 40 y	11	24.24%
41- 50 y	10	22.2%
51 - 60 y	7	15.54%
61 - 70 y	6	13.32%

Table (2): Age and sex

Age range	Males	Females
0 – 20 y	2	1
21 – 30 y	4	4
31 – 40 y	5	6
41 – 50 y	6	4
51 – 60 y	3	4
61 – 70 y	4	2
Total	24	21

Male to female ratio was 1.14 : 1 (Fig. 15).

Site :

The majority of cases were within the lower two thirds of rectum (i.e. within reach of the examining finger 82.04%). The commonest site be affect in the rectum was the middle third (48.84%), followed by the lower third (33.3%)then the upper third (17.76%) (Fig. 17).

Table (3): Site

Site	Number	Percentage
Lower third	15	33.3%
Middle third	22	48.84%
Upper third	8	17.76%

Type of lesion :

Gross pathology of tumours in our patients showed that (22) patients had fungating growths (48.84%), (14) patients (31.08%) had annular strictures and (9) patients (19.98%) had ulcerative growths (Fig. 18).

Table (4): Type of lesion.

Type	Number	Percentage
Masses	22	48.84
Strictures	14	31.08
Ulcers	9	19.98

Table (5): Type and site (Fig. 19)

Type	Lower third	Middle third	Upper third
Masses	12	6	4
Strictures	7	4	3
Ulcers	5	3	1

The most common symptoms in order of their frequency in our patients were:-

Alteration in bowel habits in (31) patients	68.82
Abdominal pain and colic in (24) patients	53.28
Bleeding per rectum in (19) patients	42.18
Symptoms of intestinal obstruction in (7) patients	15.54
And abdominal mass in (6) patients	13.32

Other non-specific symptoms like dyspepsia, tenesmus, and flatulence were found in (22) patients (48.84%) of our patients.

Among the patients presenting with alteration in bowel habits, constipation (17 patients) was found to be more than diarrhea (8 patients). (37.74% versus 17.67%).

Loss of weight as a presenting symptom was recorded only in (4 patients). (8.88%) of our cases.

Different presenting symptoms shown in table (6) to table (13):

Alteration in bowel habits	***No.***	***%***
+ ve	31	68.82
- ve	14	31.08
Total	45	100%

Table (6)

Alteration in bowel habits	*No.*	*%*
Constipation	17	37.74%
Diarrhea	8	17.67%
Both	6	13.32%

Table (7)

Abdominal pain	*No.*	*%*
+ ve	24	53.28
- ve	21	46.62
Total	45	100%

Table (8)

Bleeding per rectum	*No.*	*%*
+ ve	19	42.18
- ve	26	57.72
Total	45	100%

Table (9)

Intestinal obstruction	*No.*	*%*
+ ve	7	15.54
- ve	38	84.36
Total	45	100%

Table (10)

Abdominal mass	*No.*	*%*
+ ve	6	13.32%
- ve	39	86.58%
Total	45	100%

Table (11)

Other non-specific symptoms	*No.*	*%*
+ ve	22	48.84%
- ve	23	51.06%
Total	45	100%

Table (12)

Body weight	*No.*	*%*
Loss of weight	4	8.88
No loss of weight	41	91.02
Total	45	100%

Table (13)

Out of (45) cases only (5 patients) were irresectable. Simple loop colostomy was done for (3 patients) and terminal colostomy and closure of the lower segment was done for (2 patients) ***(Hartman technique).*** for the resectable (40 patients) the following surgical techniques were done (Table 14).

1- Anterior resection was done for (12 patients), with partial cystectomy for (4 patients) and with hysterectomy and excision of the posterior vaginal wall for (3 patients).

2- Pull through operation was done for (5 patients) "sphincter preservation when the tumor was very low".

3- Abdomino-perineal resection was done for (23 patients), with hysterectomy and excision of the posterior vaginal wall for (6 patients) & with left hepatic lobectomy for (3 patients).

Table (14) showing different surgical techniques done for the patients included in this study

Surgical techniques	*No.*	*%*
1- Anterior resection.	***12***	***26.6%***
+ Partial cystectomy	4	8.7%
+ Hysterectomy and excision of the posterior vaginal wall.	3	6.7%
2- Pull through abdominoanal resection "Sphincter Preserving".	***5***	***11.1%***
3- Abdomino-perineal resection.	***23***	***51.1%***
+ Hysterectomy and excision of the posterior vaginal wall.	6	13.3%
+ Left hepatic lobectomy.	3	6.7%
4- Palliative colostomy.	***5***	***11.1%***
Total	***45***	***100%***

Table (15): T-stage

T stage	*No.*	*%*
T 2	4	10%
T 3	21	52.5%
T 4	15	37.5%

(21 patients) had T3 lesions (52.5%), while (15 patients) had T4 lesions (37.5%), and (4 patients) had T 2 lesions (10%).

Table (16) N- stage

N stage	*No.*	*%*
N0	5	12.5%
N1	9	22.5%
N2	7	17.5%
N3	19	47.5%

(47.5%) of lesions had extensive nodal involvement (N3) while only (12.5%) of cases had no nodal involvement.

Table (17) T. stage versus N. stage

T. stage	*Number*	*Nodal stage*			
		N0	*N1*	*N2*	*N3*
T2	4	4	-	-	-
T3	21	1	7	2	11
T4	15	-	2	5	8

Of T 3 lesions, (52.4%) had extensive (N3) nodal involvement, while (53.3%) of T4 lesions had extensive (N3) nodal involvement. On the other hand, all T2 lesions had no nodal metastases and all T4 lesions had nodal metastases.

Table (18) pathology and T. stage

Pathology	Number	T. stage		
		T2	T3	T4
A. C. II	19	4	9	6
A. C. III	8	-	5	3
Colloid A. C.	11	-	6	5
Carcinoid	2		1	1

Table (19) pathology and N-stage

Pathology	Number	N. stage			
		N0	N1	N2	N3
A. C. II	18	4	5	2	7
A. C. III	8	1	2	2	3
Colloid A. C	12	-	2	3	7
Carcinoid	2	-	-	-	2

Colloid type of adenocarcinoma had the highest incidence of both extensive nodal involvement (N3) (583%) and deep wall infiltration (T4) (45.4%).

Histopathological varieties of rectal tumors shown in (fig. 30-35).

Transrectal Ultrasonography (TRUS):

It was done for 35 cases and staging was done according to the TNM staging system as follows:

- UT1: Tumors involving the first 3 echoic layers without involvement of the fourth. Layer.
- UT2: Tumors involving the fourth layer without breach of the outer margin.
- UT3: Tumors extending beyond the fourth layer into the perirectal tissues.
- UT4: Extension into contigous argans.

Table (20) TRUS and T. stage

Sonographic stage	Number	Pathological stage		
		PT2	PT3	PT4
UT2	5	3	1	1
UT3	18	1	15	2
UT4	12	-	1	11

TRUS predicted accurately the depth of invasion in (29 patients) (82.9%), with (2 patients) cases overstaged (5.7%) and (4 patients) under staged (11.4%).

It accurately detected T2 lesions in (3) out of (4) cases (75%), T3 lesions in (15) out of (17) cases (88.2%). And T4 lesions in (11) out of (14) cases (78.6%).

Table (21) Detection of perirectal fat invasion by TRUS

Fat invasion by TRUS	Number of cases
True positive	28
False negative	3
True negative	3
False positive	1

TRUS accurately detected fat invasion in (88.6%) of cases. Its sensitivity in detection of fat infiltration (T3-T4 vs. T2 lesions) was (90.3%), specificity was (75%) with a positive predictive value of (96.5%) and a negative predictive value of (50%).

Table (22) TRUS and N. stage

N. stage by TRUS	*Number*	*Pathological N. stage*			
		PN0	*PN1*	*PN2*	*PN3*
UN0	6	3	2	1	-
UN1	12	2	7	-	3
UN2	11	-	1	4	6
NU3	6	-	-	-	6

TRUS detected accurately the stage of nodal affection in (30) out of (35) cases (85.7%), with accurate staging of the affected nodes in (20) out of (35) cases (57.1%) overstaging in (4) cases (11.4%) and understaging in (11) cases (31.4%).

It accurately detected N0 in (3) out of (5) cases (60%) N1 in (7) out of (10) (70%), N2 in (4) out of (5) (80%) and N3 (6) out of (15) cases (40%).

Table (23) Detection of nodal metastases by TRUS

Nodal affection by TRUS	*Number*
True positive	27
False negative	3
True negative	3
False positive	2

It accurately detected nodal metastases in (85. 7%) with a sensitivity of (90 %), specificity of (60 %), positive predictive value of (93.1 %) and negative predicative value of (50 %).

As regards local TN staging as a whole TRUS accurately staged (17) tumors (48.6%) overstaged (3) tumors (8.6 %) and understaged (15) tumors (42.8 %).

Table (24): TN staging by TRUS

TRUS stage	*Number*	*Pathological stage*							
		T2 N0	*T3 N0*	*T3 N1*	*T3N2*	*T3N3*	*T4N1*	*T4N2*	*T4N3*
T2 N0	2	2	-	-	-	-	-	-	-
T2 N1	1	1	-	-	-	-	-	1	-
T2 N2	1	-	-	-	-	-	-	-	-
T3 N0	6	1	2	1	1	1	-	-	-
T3 N1	7	-	-	4	-	2	1	-	-
T3 N2	3	-	-	-	2	1	-	-	-
T3 N3	4	-	-	-	-	2	2	-	-
T4 N0	2	-	-	-	-	1	1	-	-
T4 N1	2	-	-	-	-	-	1	1	-
T4 N2	6	-	-	-	-	-	-	3	3
T4 N3	1	-	-	-	-	-	-	-	1

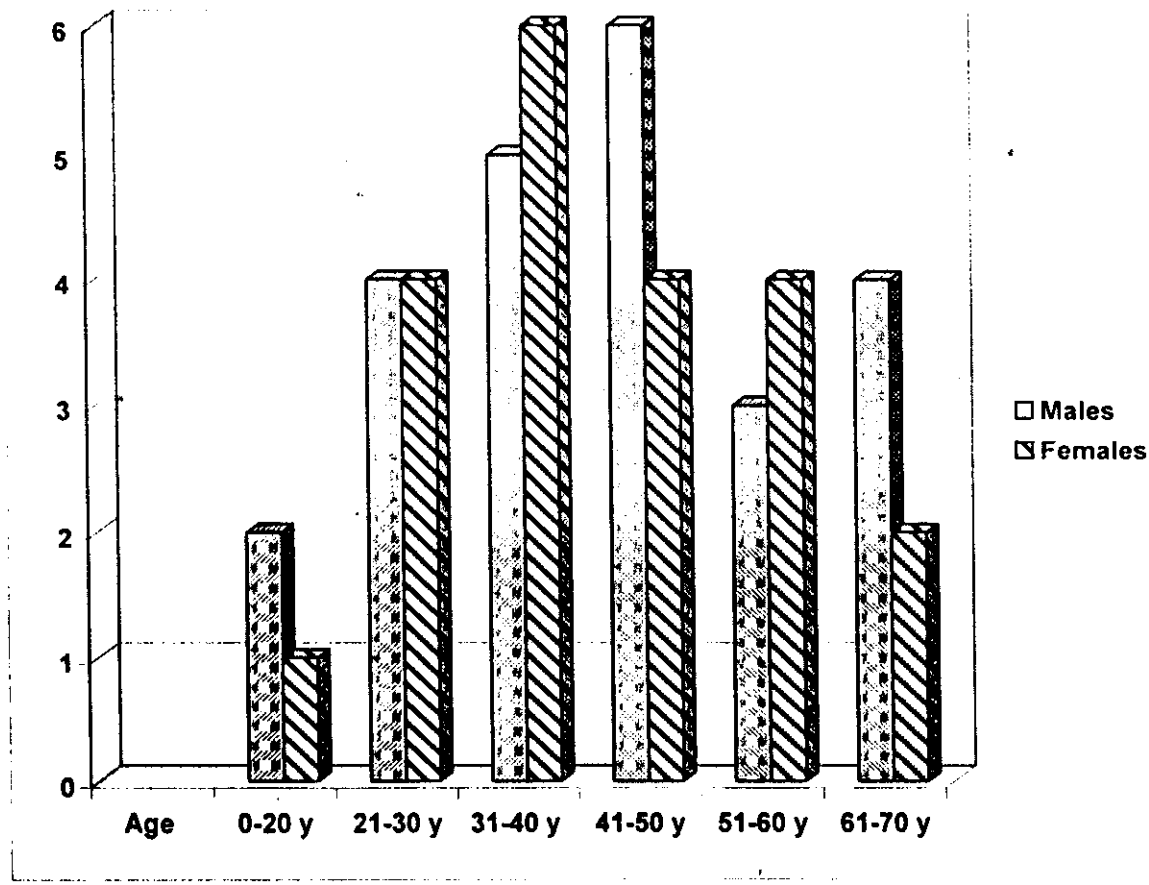

Fig. (15): Male to female ratio in this study was 1.14: 1

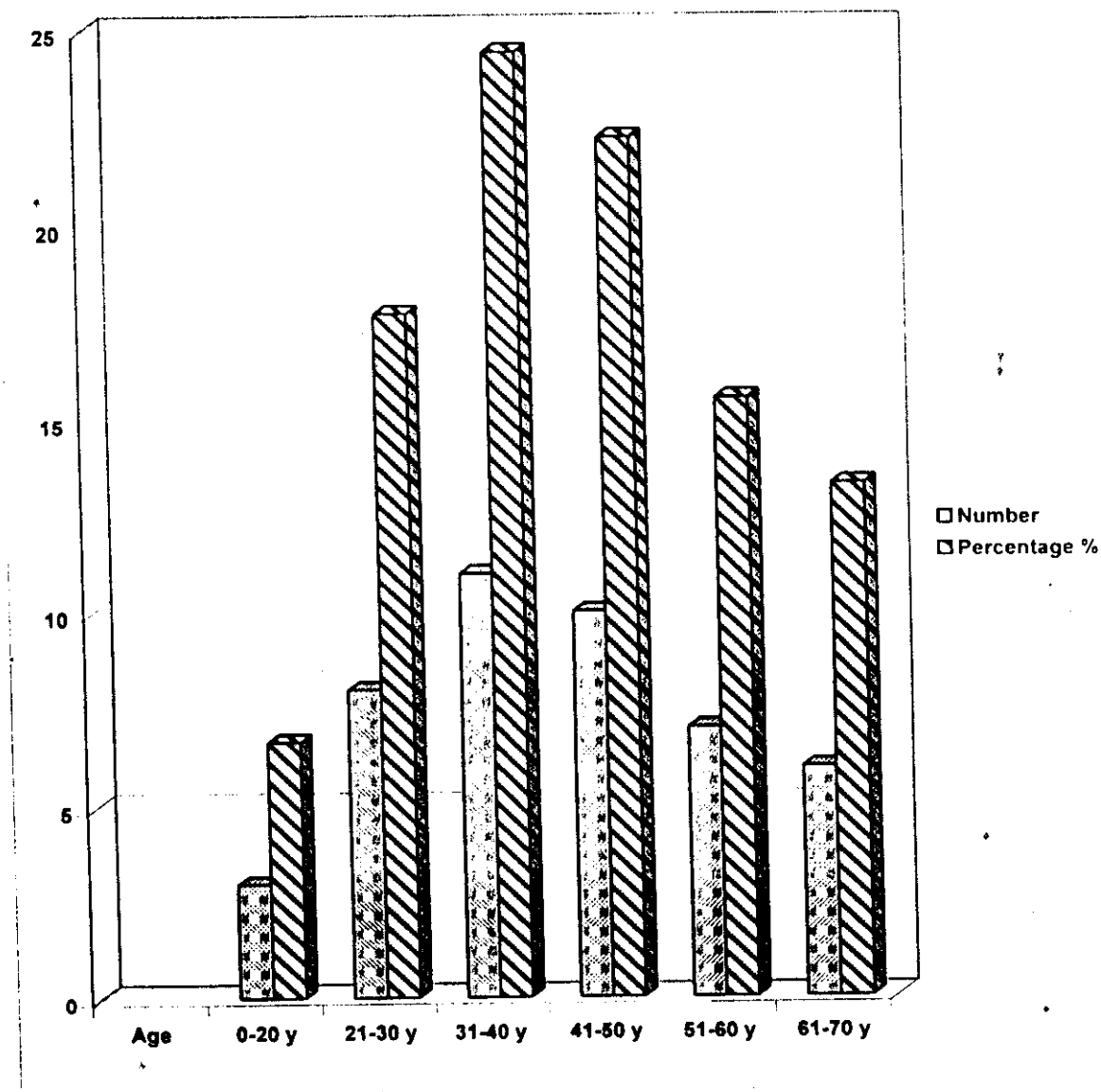

Fig. (16): The age specific incidence of the patients incldued in this study was Predominantly in 4th decade with a mean ag ge of 39.4ys.

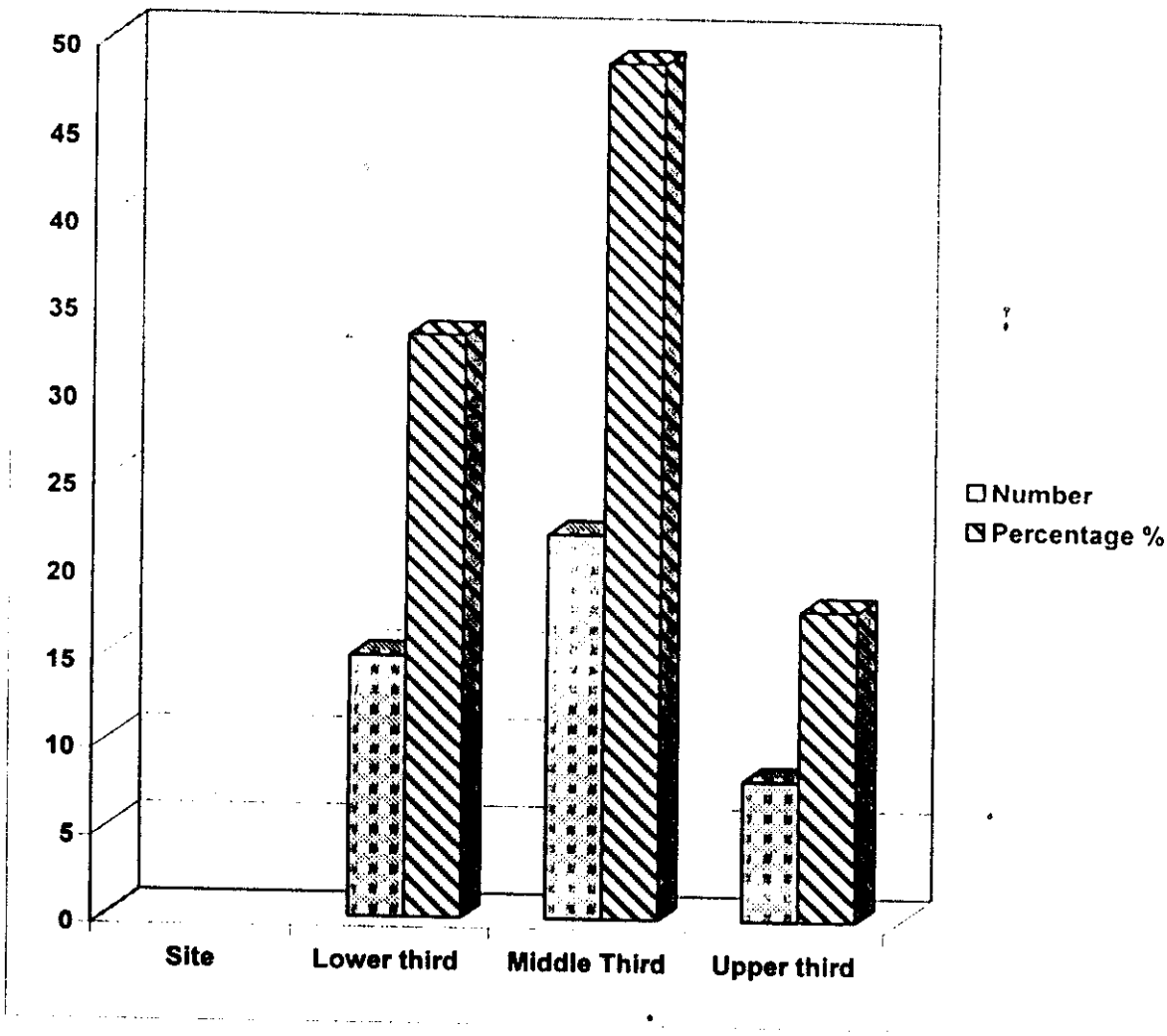

Fig. (17): The distribution of the lesions in the rectum. The middle third was the commonest site to be affected in 22 patients (48.84%) followed by the lower third 15 patients (33.3%), then the upper third 8 patients (17.76%).

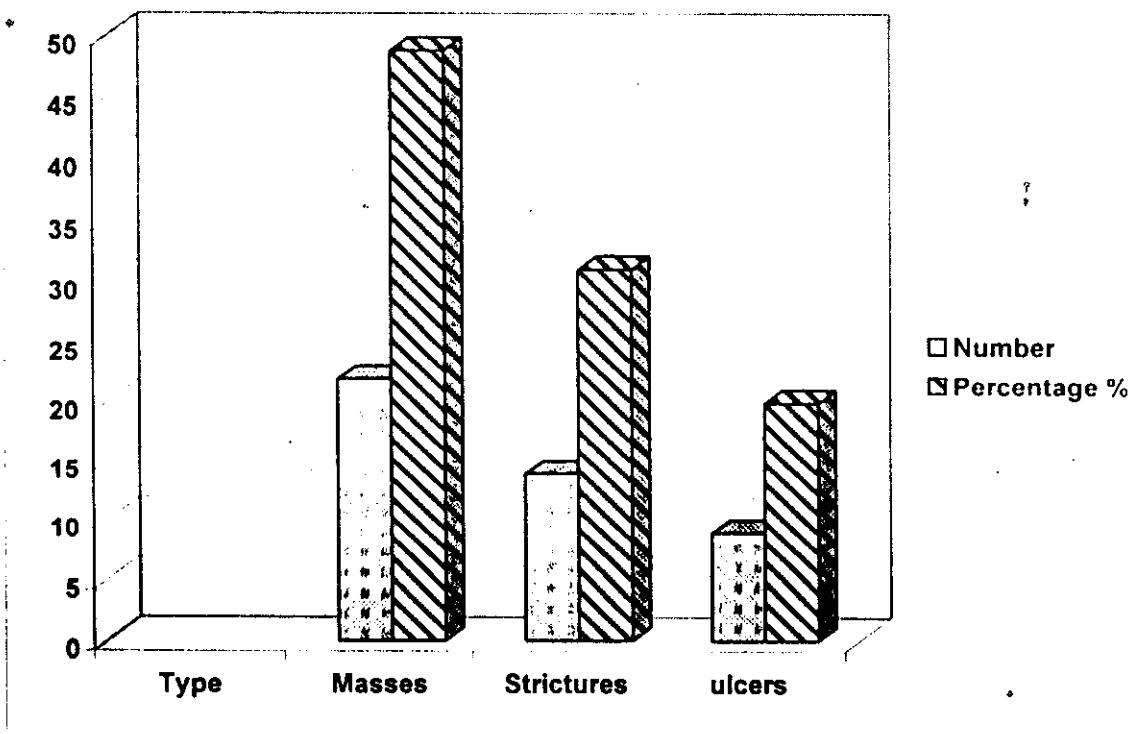

Fig. (18): The gross pathology of rectal tumours in the patients included in this study. Fungating masses represent (22) patients (48.84%), anualr strictures represent (14) patients (31.8%), and ulcerative growths represent (9) patients (19.98%) growths represent (9) pataints (19.98%).

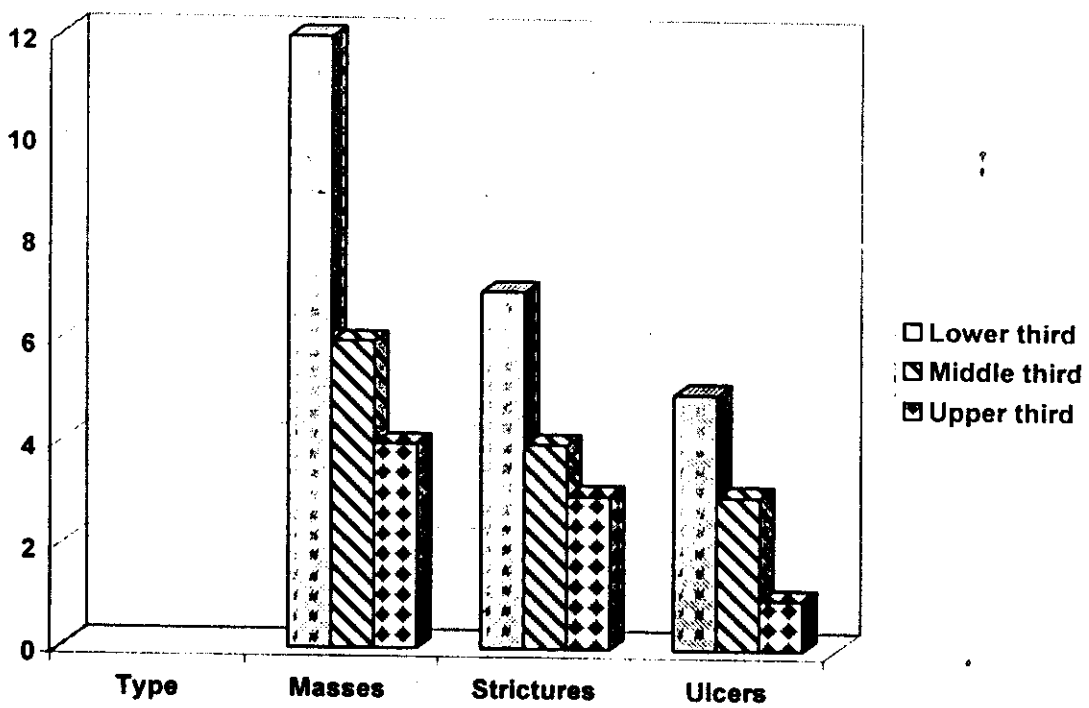

Fig. (19): The distribution of the lesions in the rectum in the lower, Middle and upper thirds according to gross pathology.

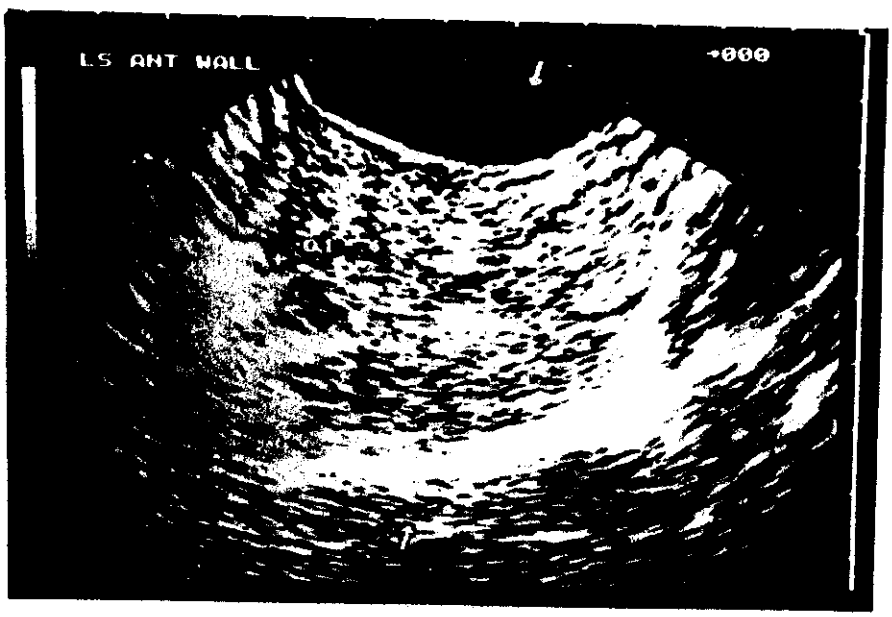

*Fig. (20) * case No. (3)*

- ***TURS:***

  *Anterior wall rectal mass measuring 6.5 x 7 cm with circumferential infiltration of all rectal layers.

  * No pelvic organ infiltration.

  * No perirectal lymph nodes detected.

- ***Staging:***

  * TRUS: T3 N0 M0 (B2)

  * Post-operative pathological staging: T4 N1 M0 (C3).

- ***Result:***

  * Not accurate.

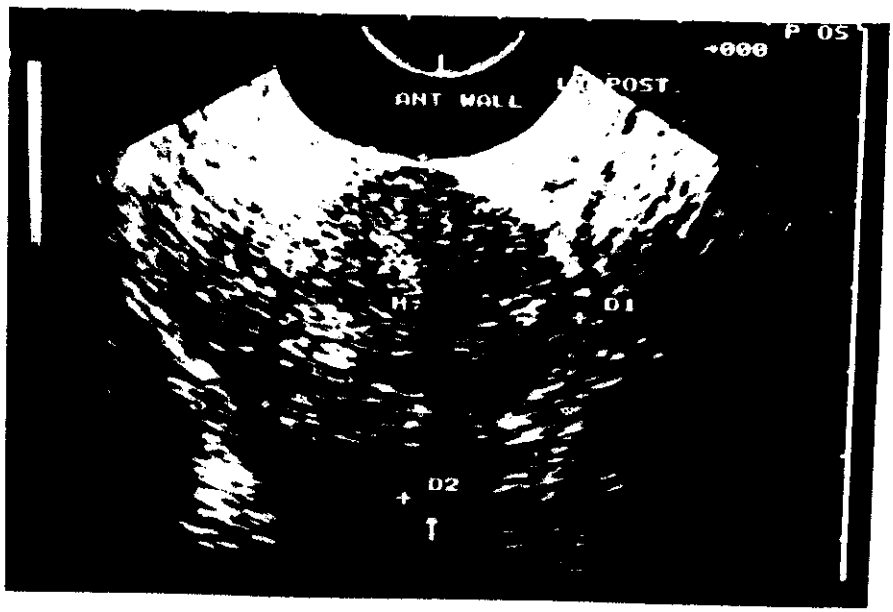

*Fig. (21) * case No. (5)*

- ***TURS:***

*Large rounded hypoechoic submucosal anterior rectal wall mass measuring 4 x 3.7 cm infilrating all rectal layers.

* No pelvic organ infiltration.

* Perirectal lymph nodal enlargement is noted.

- **Staging:**

  * TRUS: T3 N1 M0 (C2).

  * Post-operative pathological staging: T3 N1 M0 (C2).

- **Result:**

  * Accurate

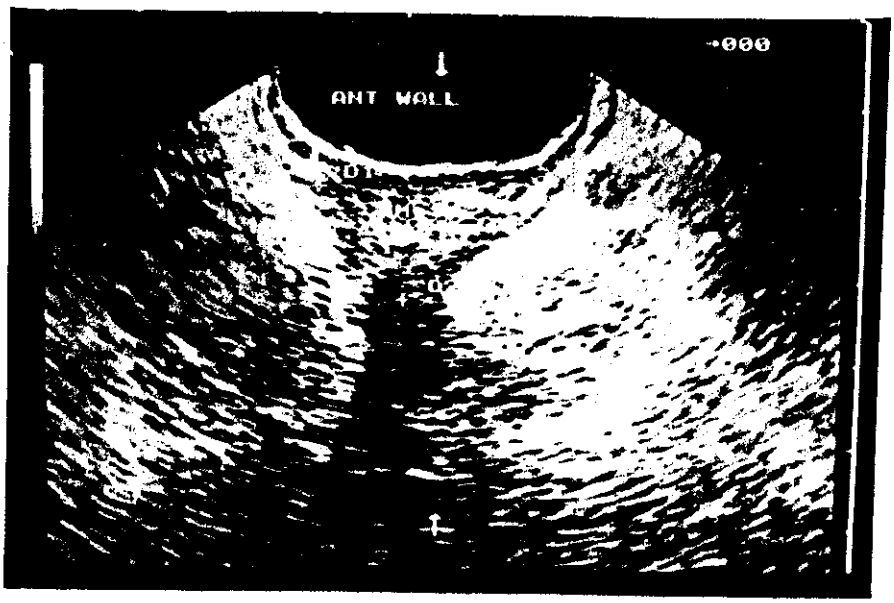

*Fig. (22) * case No. (9)*

- ***TURS:***
  - * Hypoechoic submucosal anterior rectal wall mass measuring 4 x 4.1x 2.5 cm, 5 cm from the anal verge.
  - * No pelvic organ infiltration.
  - * perirectal lymph node enlargement is noted.
- ***Staging:***
  - * TRUS: T3 N1 M0. (C2)
  - * Post-operative pathological staging: T3 N2 M0. (C2)
- ***Result:***
  - * Accurate.

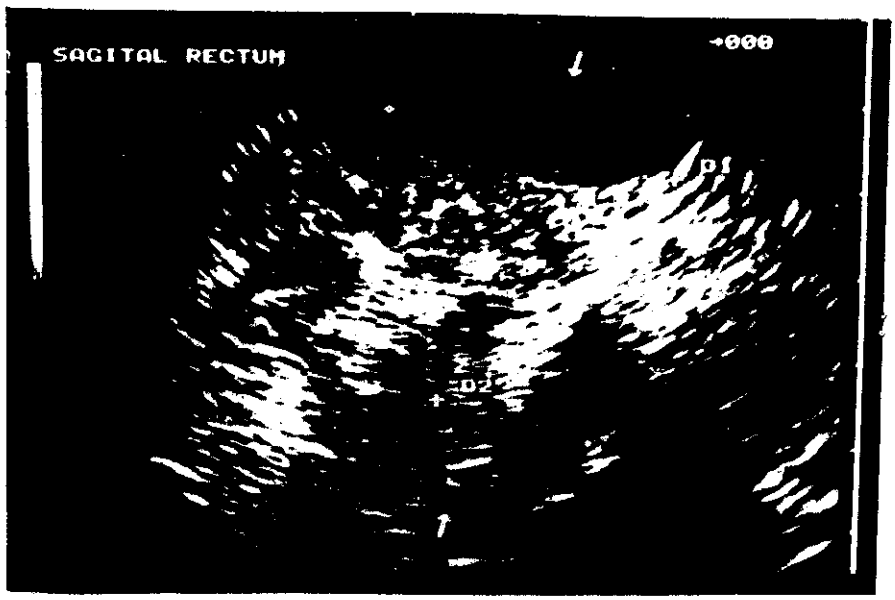

*Fig. (23) * case No. (14)*

- ***TURS:***
  - * An exophytic mass measuring 4.3 x3.1 cm at the posterior rectal wall with circumferential wall infiltration with infiltration of perirectal fat.
  - * No pelvic organ infiltration.
  - * No perirectal lymph nodes detected.

- ***Staging:***
  - * TRUS: T3 N0 M0.(B2)
  - * Post- operative pathological staging: T3 N2 M0. (C2)
- ***Result :***
  - * Not accurate

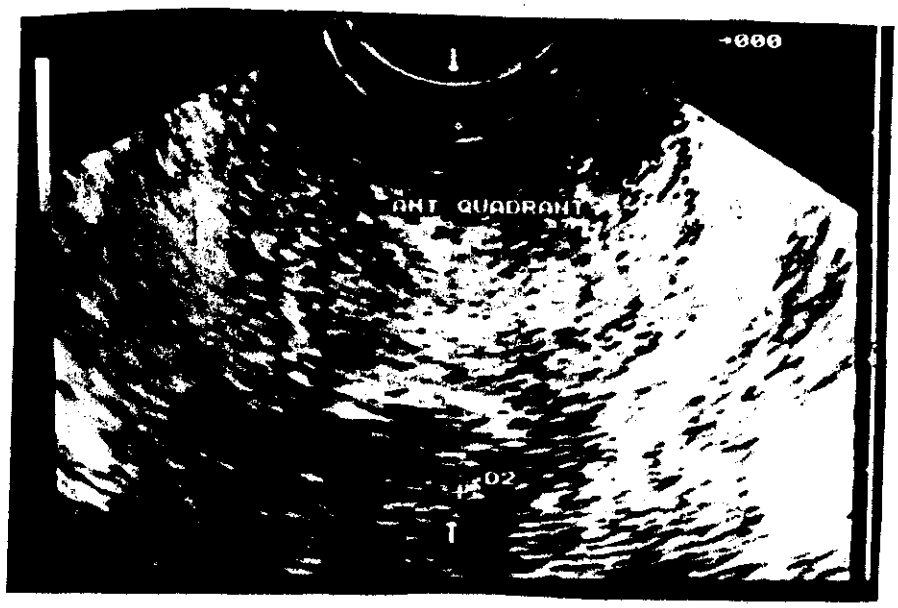

*Fig. (24) * case No. (19)*

- ***TURS:***

  *Large hypoechoic seen at the anterior rectal wall measuring 4.1 x 3.5 x 5.3 cm with circumferential infiltration of all rectal layers.

  * No pelvic organ infiltration.

  * No perirectal lymph nodes detected.

- ***Staging:***

  * TRUS: T3 N0 M0.(B2)

  * Post- operative pathological staging T3 N0 M0 .(B2)

Result:

* Accurate

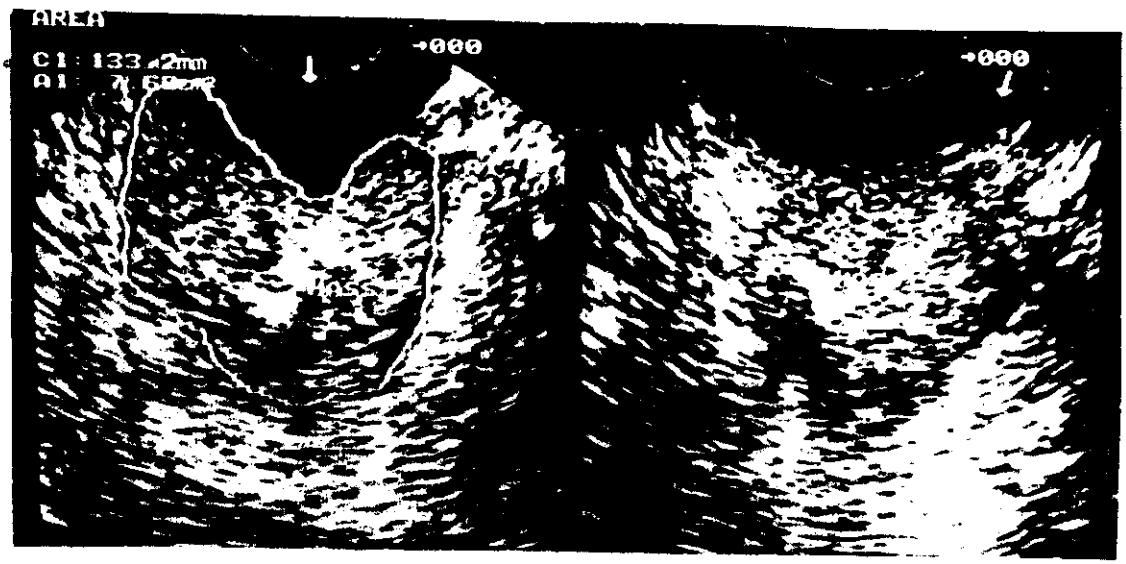

*Fig. (25) * case No. (22)*

- ***TURS:***

  * Rectal mass at the right posterior lateral wall measuring 3.1x 2.9x 2.7 cm infiltrating all rectal layers.

  * No pelvic organ infiltration.

  * No perirectal lymph nodes detected.

- ***Staging:***

* TRUS: T3 N0 M0 (B2)

* Post-operative staging: T3 N1 M0 (C2)

- ***Result:***

Not accurate

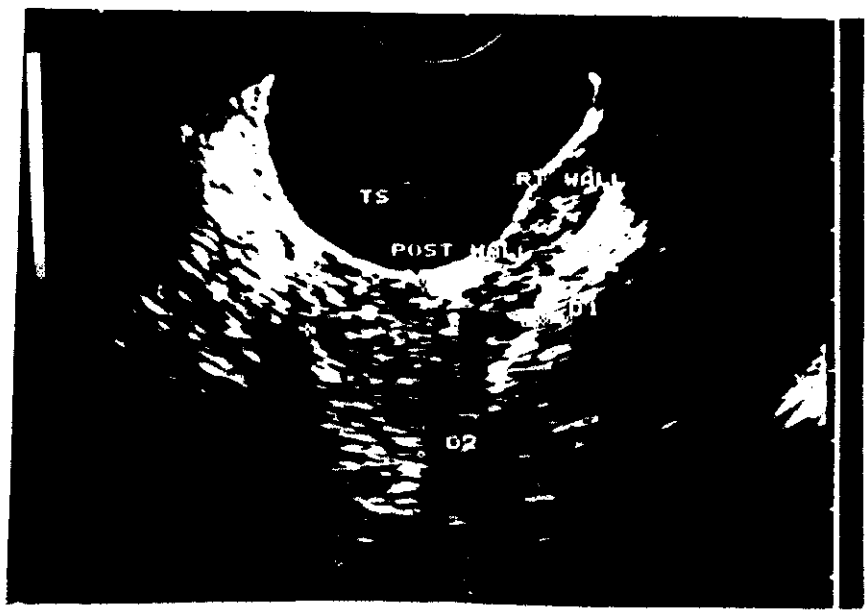

*Fig. (26) * case No. (24)*

- ***TURS:***
  - * Rectal mass measuring 4x 2.6 cm at the right posterior wall of the rectum infiltrating all rectal layers.
  - * No pelvic organ infiltration.
  - * No perirectal lymph nodes detected.

- ***Staging:***
  - * TRUS: T3 N0 M0 (B2)
  - * Post- operative pathological staging: T3 N2 M0. (B2)
- ***Result :***
  - * Accurate

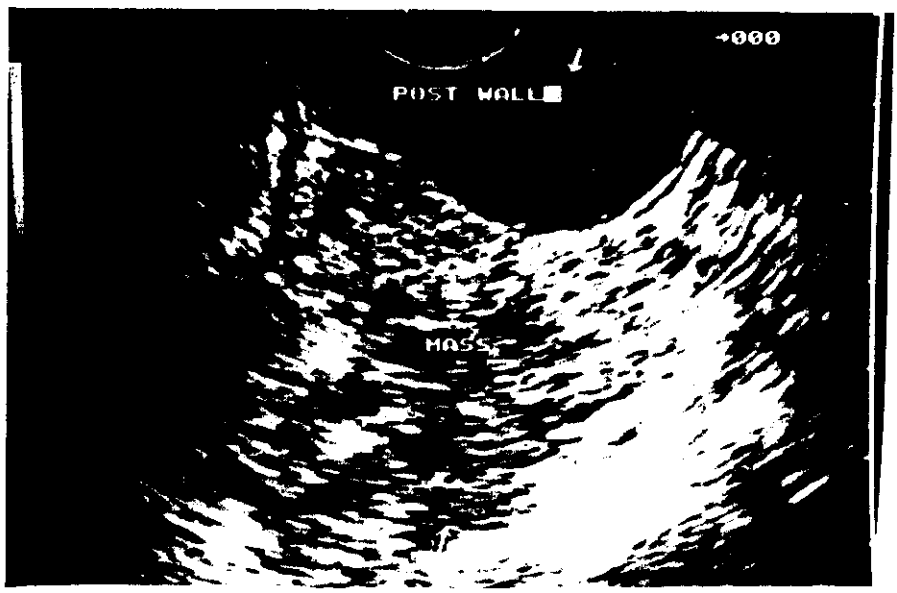

*Fig. (27) * case No. (29)*

- ***TURS:***

  * Posterior wall rectal mass destroying the rectal wall mucosa with circumferential infiltration of all rectal layers.
  * No pelvic organ infiltration.
  * Perirectal lymph node enlargement is noted.

- ***Staging:***

  * TRUS: T3 N1 M0. (C2)
  * Post- operative pathological staging: T3 N1 M0. (C2)

- ***Result :***

  * Accurate

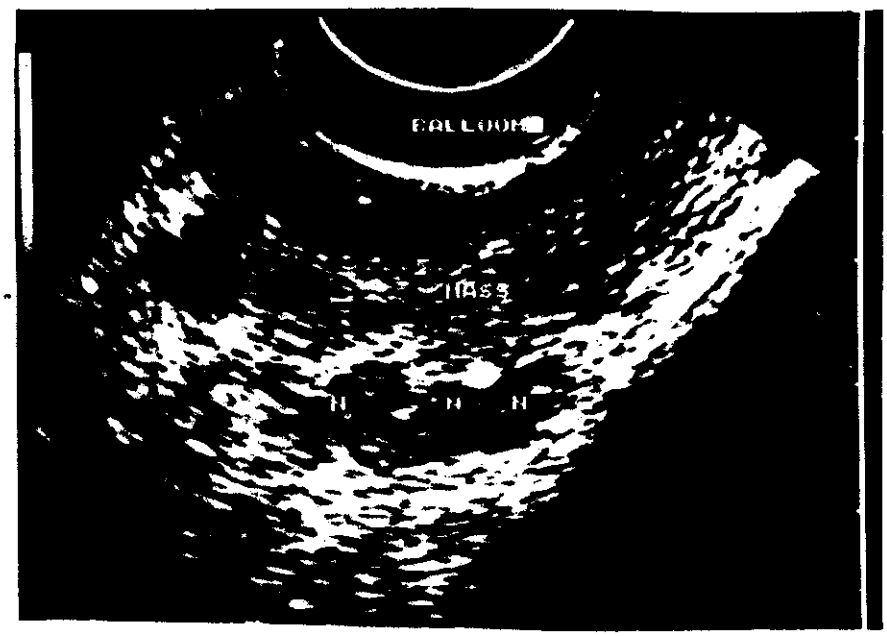

*Fig. (28) * case No. (31)*

- ***TURS:***

  * Anterior wall rectal mass measuring 4 x 3 x 7 cm with circumferential infiltration of all rectal layers.
  * No pelvic organ infiltration.
  * Multiple perirectal enlarged lymph nodes are noted.

- ***Staging:***

  * TRUS: T3 N1 M0 (C2)
  * Post- operative pathological staging: T3 N1 M0. (C2)

- ***Result :***

  * Accurate

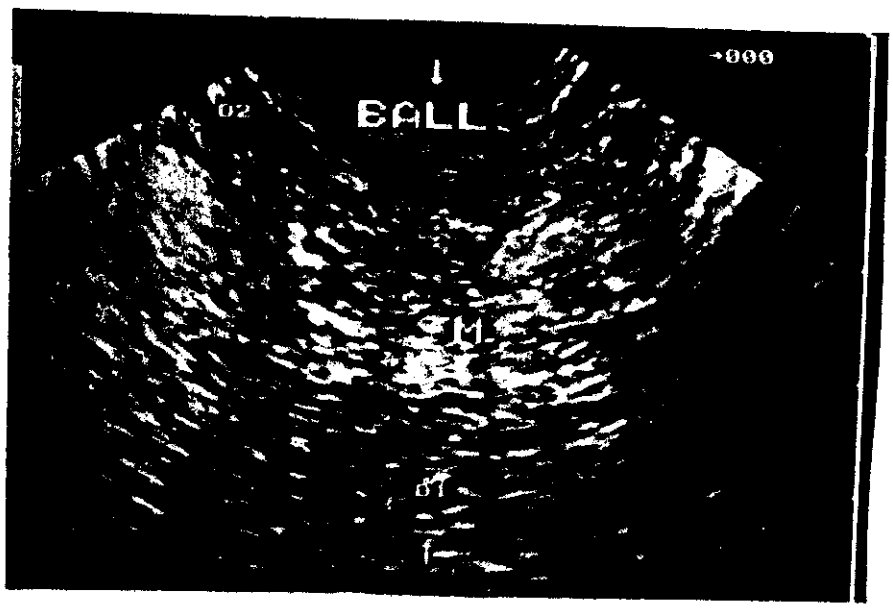

*Fig. (29) * case No. (35)*

- ***TURS:***
  - * Anterior wall rectal mass measuring 4.5 x 3.5 cm at the level of recto- sigmoid.
  - * No pelvic organ infiltration.
  - * No perirectal lymph nodes detected.

- ***Staging:***
  - * TRUS: T3 N0 Mo. (B2)
  - * Post- operative pathological staging: T3 N0 M0. (B2)
- ***Result :***
  - * Accurate

Fig. (30) : Well differentiated adenocarcinoma of the rectum showing well formed acini lined by cells showing cytological features of malignancy. (H & E x 100).

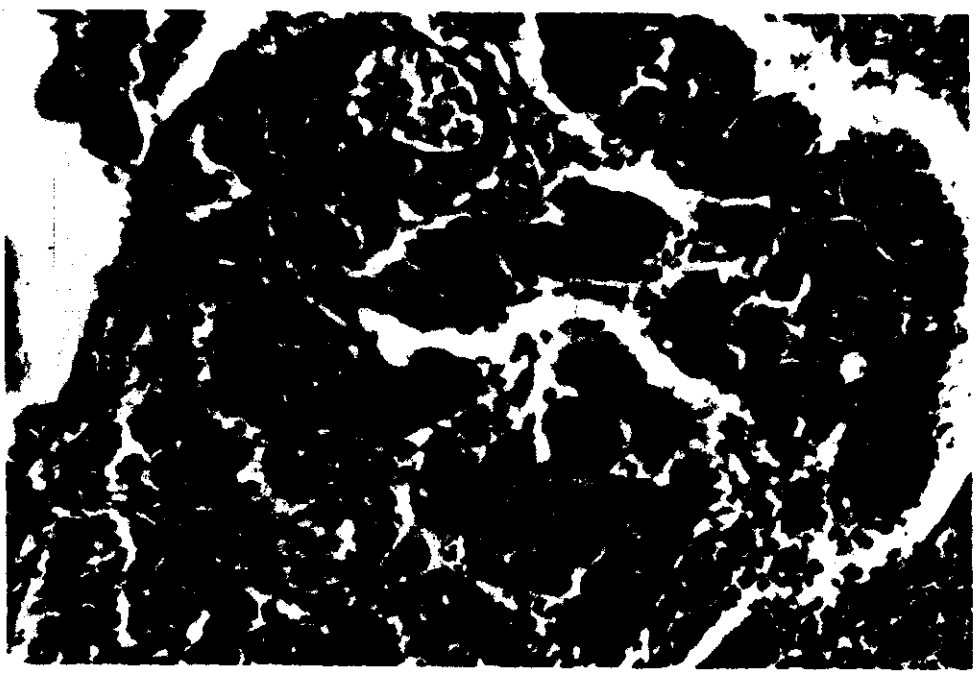

Fig. (31): Moderately differentiated adenocarcinoma of the rectum showing acini and sheets of neoplastic cells (H & E x 200).

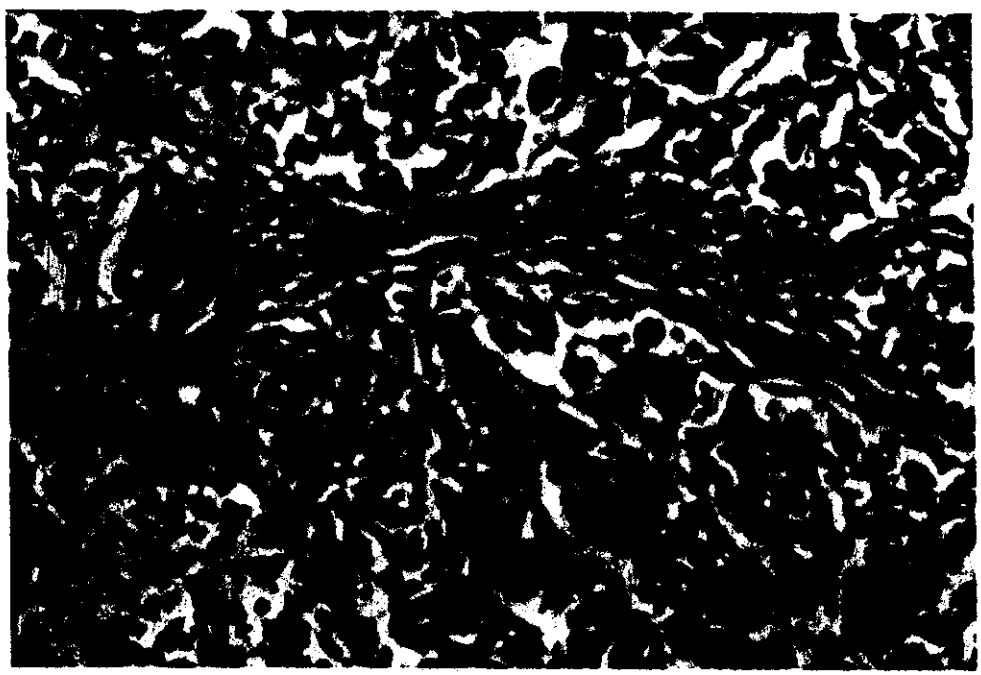

Fig. (32) : Poorly differentiated adenocarcinoma of the rectum showing nests and sheets of anaplastic cells infiltrating the musculosa (H & E x 200).

Fig. (33) : Mucoid adenocarcinoma of the rectum showing pools of mucinous matrix with malignant mucin secreting cells singly & in small clusters or forming acini (H & E x 100).

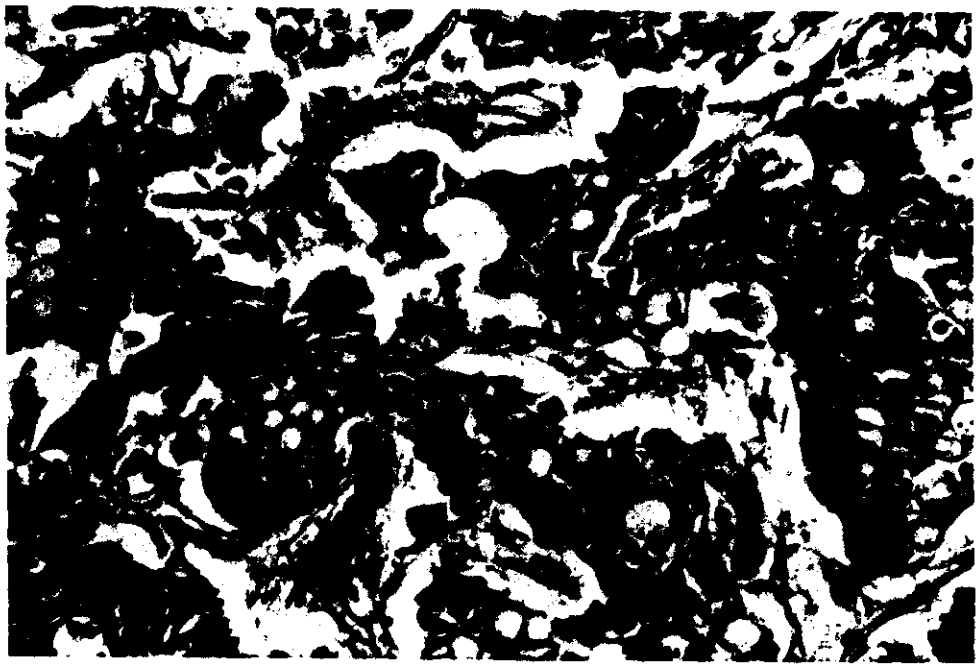

Fig. (34) : Signet – ring cell carcinoma of the rectum showing sheets of mucin secreting cells with malignant nuclei & minimal extra cellular mucin (H & E x 200).