

Primary repair of colon injuries in a developing country

Because there are several specific disadvantages to a colostomy in a developing country, primary repair for colon injury was electively performed. Sixty-one consecutive patients with colon injury were seen between 1978 and 1989 and 57 of these (93 per cent) underwent primary repair. In four a colostomy was constructed. Emergency repair was carried out regardless of site or mode of injury, presence of hypotension or peritoneal contamination. There was one death unrelated to anastomotic complications and one anastomotic leakage. The faecal fistula closed spontaneously in 4 weeks. The wound infection rate was 10 per cent. These data support the emerging view that primary repair of colon injury is the management of choice.

V. Naraynsingh,
D. Ariyanayagam and
S. Pooran

Department of Surgery, General
Hospital, Port of Spain, Trinidad,
West Indies

Correspondence to:
Mr V. Naraynsingh

The traditional management of colon injury has been the formation of a colostomy. This policy is based on World War II experience and has continued unchallenged until the early 1980s^{1,2}. In the past decade, however, there has been a move toward primary repair without colostomy^{3,4}. The safety of this practice has been attested by several authors⁴⁻⁸.

In surgical practice in a developing country, colostomy construction has obvious disadvantages. Colostomies are ill-managed by the patient due to poor education, the unreliable supply of collecting appliances and inadequate toilet facilities. Members of a largely outdoor population become social recluses and productive members of society are kept away from the workplace for prolonged periods of time.

Before the new policy of primary repair the average time from injury to colostomy closure was 14 months (because of shortage of operating theatre time). The cost to the health system is an underestimated factor; multiple admissions increase bed occupancy, operating theatre time, drug consumption and usage of manpower resources.

Since 1978, we have adopted the practice of one-stage surgery as a routine in the management of colon injury.

Patients and methods

Between 1978 and 1989, 61 patients with colonic trauma were seen. Stab wounds accounted for 28, gunshot wounds for 22, there were three cases of blunt injury and eight were iatrogenic. Of these 61 patients, 57 (93 per cent) underwent primary repair without colostomy. In four patients a colostomy was constructed; in three the injury was in the depths of the pelvis and primary repair was considered technically difficult and unsafe. The fourth case had blunt trauma to the transverse colon with much bruising of the bowel wall and a large hematoma in the mesocolon.

For primary repair the injured bowel wall was repaired using an inverting two-layer technique with 2/0 chromic catgut. Neither intraoperative colonic irrigation nor peritoneal lavage was used. Debridement of the bowel edges was unnecessary in most cases. In all instances perioperative broad-spectrum antibiotics were used.

Results

There was one death and one anastomotic leakage. Death occurred in a 35-year-old man with gunshot injury to the right colon, right ureter, vena cava and small intestine. These structures were repaired primarily but he remained in shock and unconscious until death 5 days later. At post mortem there was no evidence of anastomotic leakage or intraperitoneal sepsis.

Anastomotic leakage occurred in a 30-year-old man with gunshot injury to the rectosigmoid area. Debridement of the injured area was carried out before repair and, because of widespread contamination and pelvic haematoma, a drain was

left near the anastomosis. He developed a faecal fistula which closed spontaneously after 4 weeks.

The overall incidence of superficial wound infection was 10 per cent (six cases) and no deep wound disruption or intra-abdominal abscess occurred.

Discussion

The reduced severity of injuries in a civilian setting and advances in resuscitation and antibiotic therapy have allowed surgeons in the past decade to perform primary repair in colon injury with minimal morbidity and mortality⁴⁻⁹. In this series, the mode or site of injury, the presence of hypotension or peritoneal contamination did not influence the decision to repair the colon primarily, resulting in one of the highest rates of primary repair (93 per cent) reported in the literature.

A great deal of attention has been given in the past to so-called 'risk factors'^{4,10-12}, the presence of which preclude⁵ primary repair of the traumatized colon. Cases for primary repair were carefully chosen and the procedure selectively practised^{3,4,13}.

As confidence grew in the safety of the procedure, the number of identified risk factors became smaller and the rate of primary repair increased from 52 per cent to 64 per cent^{4,7}. A recent series⁹ reinforces the lack of credence given to excluding cases for primary repair based on previously identified risk factors and reports a 93 per cent rate of primary repair, with only one suture line failure in 95 cases.

Peritoneal lavage is a procedure currently enjoying widespread popularity in surgical practice. In none of the cases reported in this series has this been done and our overall rate of septic complications was 10 per cent - well within the accepted margins for a contaminated procedure. A recent critical review of the literature¹⁴ fails to support the benefit of intraoperative peritoneal lavage and our results substantiate this.

The adoption of primary repair of colon injuries was dictated by the special needs of the West Indian population and the limited resources of the health system. These results demonstrate its safety and benefits and this practice is recommended as the treatment of choice in the management of colon trauma.

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lymphadenopathy in the involved lymph nodes^{1,2}. Although many nodes in our study showed reactive changes and melanin pigmentation, features which usually suggest a skin disease—associated lymphadenopathy; only one patient had clinical evidence of this (*lichen planus*). We believe, therefore, that these nodes may become palpable in some patients without an obvious skin disease. It would be difficult to speculate about aetiology of the lymph node prominence in such patients, but the presence of melanin pigments and reactive hyperplasia raises the possibility of repeated minimal trauma particularly to the nipple or areola.

Intramammary lymph nodes may be detected on mammograms by the 'doughnut' sign, where fatty replacement at the hilum gives rise to an area of translucency or ring appearance⁵. As fatty infiltration was present in only 21 per cent of our cases (*Figure 2B*), mammography would not have aided diagnosis in most of these patients.

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Treatment of breast lumps in the teenager

V. Naraynsingh, G. C. Raju and K. Sieunarine

Department of Surgery and Pathology, General Hospital, Port of Spain, Trinidad, West Indies

Correspondence to: Mr V. Naraynsingh, 94 Eastern Main Road, Tunapuna, Trinidad, West Indies

The presence of a breast lump in any age group raises the fear of malignancy, and as a result it has been suggested that all solid discrete lesions in the breast should be excised¹. However, carcinoma is rare under 30 years of age and in one report no malignancy occurred under age 27 years². If the risk of malignancy is negligible, a conservative attitude may be considered in teenage patients with breast lumps. To decide if this approach is appropriate, we analysed all our breast biopsies in the 13–19 age group.

Patients and methods

We reviewed all breast biopsies at the Port of Spain General Hospital in female patients between 13 and 19 years old over the 7-year period from 1976 to 1982.

Results

Of 2642 consecutive breast biopsies performed, 658 (24.9 per cent) were in teenage girls. In this group fibroadenoma occurred most frequently (77.6 per cent) and, with fibrocystic disease, accounted for 97 per cent of teenage breast lumps; no cases of carcinoma were encountered (*Table 1*). Of our patients with fibroadenoma, 14 per cent either had undergone previous excision of a fibroadenoma or returned with recurrence during the study period. Of the 2642 breast biopsies, 529 were malignant, the youngest 2 women being 23 and 25 years.

Discussion

As in other series^{1,2} there were no malignant lumps in our teenagers. The majority of breast lesions were fibroadenomas; these occur more commonly and at an earlier age in our population, whereas fibrocystic disease (the commonest differential diagnosis) increases with age. The clinical diagnostic accuracy for fibroadenoma in all ages can be as low as

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Table 1 Histological diagnosis of breast biopsies in age group 13–19 years

| | |
|----------------------|------------|
| Fibroadenoma | 511 (77.6) |
| Fibrocystic disease | 130 (19.8) |
| Abscesses | 14 (2.1) |
| Fat necrosis | 1 (0.2) |
| Granular cell tumour | 2 (0.3) |

Figures in parentheses are percentages

50 per cent¹. However, in our teenage population the diagnostic accuracy is very high (92 per cent) because fibroadenomas occur very frequently in coloured races and the diagnosis can be made with more certainty in this young age group where fibroadenosis is uncommon and carcinoma is very rare. In the 8 per cent misdiagnosed, the histological diagnosis was always benign, usually fibroadenosis.

Although the growth rate of fibroadenomas may increase in pregnancy, and in adolescence a large size may be reached, growth is slow and often self-limiting; thus surgery can be delayed in most patients. Fibroadenomas are often multiple and after early excision 10–20 per cent of patients return with more fibroadenomas³. Most of these recurrences occur within 5 years of surgery. Therefore, an aggressive surgical policy will result in multiple operations in a significant proportion of patients, whereas observation could result in a single operation for multiple fibroadenomas. Spontaneous regression has been reported in 10 per cent of fibroadenomas⁴ and thus surgery may be avoided if an observation policy is instituted for teenage breast lumps. Malignant change within fibroadenomas is very rare, occurring on average 10 years after the mean age of women with fibroadenomas⁵; none of our cases showed evidence of carcinoma. The risk of a missed malignancy, or one arising in a fibroadenoma under observation, is minimal.

Fibrocystic disease, the next common cause of a breast lump, is best managed conservatively.

A conservative approach is now advised in the teenager, and fibroadenomas are now observed for 5 years before considering biopsy.

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