

## LETTER TO THE EDITOR

### Gastrointestinal stromal tumor of the rectum: An analysis of six cases

Gastrointestinal stromal tumors (GISTs) are a type of neoplasm arising from the precursor cell of interstitial cell of Cajal in the myenteric plexus of gastrointestinal tract<sup>1</sup>. At present GIST may be defined as morphologically spindle cell, epithelioid cell or occasionally pleomorphic mesenchymal cell tumor that usually arise from the gastrointestinal tract, usually express the KIT protein and harbor mutation of a gene that encodes for a type III receptor tyrosine kinase either KIT or PDGFRA in upto 90% of cases<sup>2</sup>. The prevalence of GIST in gastrointestinal tract are as follows – stomach 60 to 70 percent, small intestine 20-25 percent and rectum 5%. It also arises from mesentery and omentum. Rectal GISTs account for 0.1 percent of all tumors those originate in the rectum<sup>3</sup>. There is

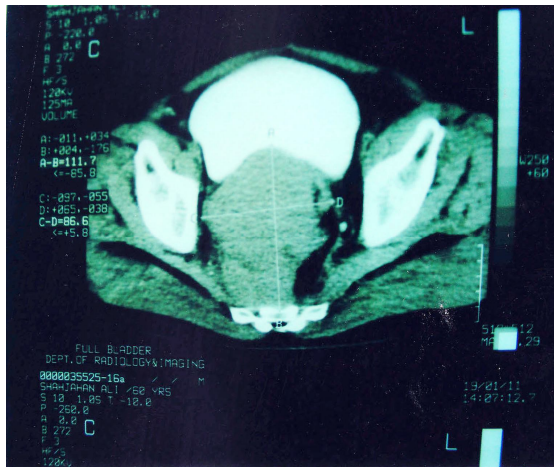
no standardized protocol for evaluation of rectal GIST in Bangladesh. We treated six patients with rectal GIST in our institute between September 2005 and March 2012. Therefore we analyzed the clinical outcome of these patients evaluating the treatment and clinicopathological characteristics of rectal GISTs. Gastrointestinal stromal tumors in rectum were confirmed by histopathological examination. C-KIT expressions were evaluated. The patients consisted of five men and one woman with a median age of 48.5 years (range 37-65 years). Four patients underwent curative resection and palliative operation was done in two patients (Table-I).

Size of the tumors were measured and median size was 7.7cm (range 4-12cm). The cell type was spindle shaped in five patients and combined spindle and epithelioid type in one patient. The mitotic count was more than 5/50HPF in three patients and less than 5/50 HPF in three patients and immunohistochemical analysis revealed c-kit positive in one patient and negative in three patients (Table-I). Three Patients were treated by adjuvant therapy with imatinib mesylate. Three patient developed rectal recurrence and two patients developed liver metastases.

**Table I:** Demography, Name of Operation and Pathologic results

Case No.	Age (years) & Sex	Name of Operation	Tumor Size (cm)	Distance (cm)	Mitotic count/5 OHPF	Cell type	C-Kit
01.	60, M	Intra abdominal excision	5x4	14	<5	Spindle	negative
02.	37, F	Low anterior resection with covering loop ileostomy	5x3	8	<5	Spindle & epithelial	negative
03.	40, M	Transanal excision	12x12	4	>5	Spindle	positive
04.	55, M	Abdomino perineal resection	4x4	4	>5	Spindle	-
05.	42, M	Loop colostomy followed by abdominoperineal resection	10.4x9.6	5	>5	Spindle	negative
06.	65, M	Low anterior resection with covering loop ileostomy	9.5x4.5	7	<5	Spindle	-

HPF, high power field.



**Fig. 1:** Computed tomogram of recurrent rectal GIST.



**Fig. 2:** 42 years old man showing a large mass of recurrent rectal Gist about 12 cm in diameter in the perineum.

Figure 1 shows computerized tomogram scan of a 60 years old man showing a well-circumscribed irregular isodense shadow of recurrent gastrointestinal stromal tumor of rectum. There was no gross evidence of perirectal tumor extension or pelvic, perirectal lymph node enlargement. A large tumor about 11 cm in diameter was felt intraluminally about 4 cm above the anal verge.

Primary treatment modality for GIST is en block resection without tumor rupture. Abdominoperineal resection thus required for tumors involving the lower rectum<sup>4</sup>. In our series, tumors were excised in patients 1 and 3, abdominoperineal resection was done to patients 4, 5 respectively and anterior resection to patients 2 and 6.

Although currently it remains yet to be determined whether adjuvant imatinib improves cure rate or just delays recurrence, adjuvant imatinib can be proposed as an option for patient at a substantial risk of relapse. Current consensus of the experts is to recommend adjuvant imatinib for patients at high risk of relapse and not for those at low risk. But there is no consensus for the patient at intermediate risk<sup>5</sup>.

Neoadjuvant therapy still confined mostly in therapeutic trial, used clinically only when there is significant ground to improve result of surgery by downsizing tumors at the initial diagnosis<sup>6</sup>.

In our series local recurrence developed in patients 1 and 2. Both patients were at intermediate risk according to the prognostic criteria of GIST. Patient 1 was treated with adjuvant imatinib therapy. Both patients were operated for the treatment of local recurrence followed by imatinib therapy. They remained free of disease throughout follow-up for one year & nine months respectively.

In patient 3, metastatic tumor in liver reduced in size after imatinib therapy and there is no local recurrence after excision of tumor in the rectum in this patient. In patient 5, the tumor was downsized by neoadjuvant imatinib, it supports the rationale of neoadjuvant therapy with imatinib.

Patient 4 & 6 did not receive adjuvant therapy and remained disease free throughout period of 4 and 3 years respectively. Patient 4 was of high risk and patient 6 at intermediate risk group according to prognostic criteria of GIST. Our study was single institutional study, sample size was small and follow-up period was short to put any comment on optimum surgical treatment, adjuvant and

neoadjuvant therapy. To evaluate the risks of recurrences in patient with intermediate risks and optimum duration of imatinib therapy, more studies by taking large number of samples over longer period in many centers are necessary. Gist is an emerging tumor of variable malignant potentiality, its clinical practice guidelines based on clinical practice have been published by the study group of each country but there is no standardized guidelines for diagnosis or treatment of GISTs in Bangladesh. A multidisciplinary study groups consisting of surgeons, gastroenterologist, diagnostic radiologists and medical oncologists should be organized for more optimal clinical practice and subsequently in achieving optimal efficacy of treatment in Bangladesh.

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## **Prevention of blindness due to agriculture related ocular trauma in Bangladesh: A nationwide campaign**

Despite the protection afforded to the eye by nature anatomically and physiologically by its situation and function, injury to the eye which leads to impairment of vision and permanent blindness, are not uncommon. It is because of this reason that ocular injuries attain great socioeconomic importance in Ophthalmology<sup>1</sup>.

Ocular injury is a leading cause of mono ocular blindness and is the second only to cataract as the most common cause of visual impairment<sup>2</sup>. Among all cases of blindness and visual impairment eye injury is among the most preventable<sup>3</sup>. In developing countries around one-third of the monocular blindness results from ocular trauma<sup>4</sup>. An estimated 55 million eye injuries occur each year worldwide, leaving 1.6 million patients blind from their injuries, 2.3 million suffers from bilateral visual impairment, restricting activities more than 01 day and 7,50,000 require hospitalization each year<sup>5</sup>. The personal costs to the afflicted individuals, such as, the effects of eye trauma on the quality of life is difficult to define but the trauma associated financial penalty is heavy.

Of the 160 million people in Bangladesh, 72% resides in rural area and they are farmer or related to agriculture somehow. During harvesting seasons, specially paddy, thousands gets trauma to eye, in particular cornea, causing abrasion, gets contaminated, turns to ulcer and finally scarring, leading to impairment of vision and blindness. They have to spend their meager wages on medical treatment. The affected individuals, who are truly victims of a “silent epidemic”, return to their previous jobs where they remain exposed to the same risk factors for developing ulceration in the other eye<sup>6</sup> and more prone to accidents in general.

Out of total labor in Bangladesh over half (51.1%) are agriculture labour<sup>7</sup>. Research reveals that 50% of eye injuries in agriculture based country are agriculture related<sup>8,9</sup>. An estimated 90% of eye injuries could be prevented through the use of protective eye wear on the job<sup>10</sup>. The Bhaktapur eye study<sup>11</sup> reveals that majority (96%) of corneal abrasions heals without infection by the use of Chloramphenicol eye ointment 3 times a day started within 12 to 18 hours of trauma, hence there is a window of opportunity to start prophylaxis which facilitates healing of corneal abrasion without any infection.

Study conducted at Dristisheba O Gobeshona (a private eye care center), Jamalpur in 2009-10 (two seasons, one Aman & one Boro) on 194 patients attended with history of ocular injury by paddy in particular to cornea reveals that: trauma caused visual impairment(6/12-6/24) 20.1%, severe visual impairment(6/36-3/60) 23.2%, blindness(<3/60) 14.5%, no visual impairment(6/6-6/9) 42.2%; central corneal opacity 44.3% and abstinence from job 12.9(±0.8) days. Study at the same center on care seeking behavior of ocular injury patients reveals that primary treatment sought: 63.5% patients from medicine shops, allopath and homeopath quack and tried self-treatment, 30.4% from ophthalmologist and 6.9% from MBBS doctors. Mean time lapsed to take primary treatment was 12(median) hours whereas to consult ophthalmologist 72(median) hours. As regard to reasons of delay to consult Ophthalmologist, 52% thought trauma was minor, 48% thought injury would heal spontaneously, 45.6% lapsed time to observe the effect of treatment taken, for want of cash money, eye specialist far away from home and so on. This study also reveals that only 2.1% took protective measure at work and maximum agriculture related ocular trauma happens in rural Bangladesh in the month of May, the Boro harvesting season.

Traumatic corneal injury during cultivation is likely, so there remains every chance of visual impairment. Most of the victims are rural poor, who are less educated, day labor and farmer. They are not aware of consequences of this minor trauma and importance of taking protective measures and treatment in time. Above study reveals that the median time lapsed to seek first treatment was 12 hours which is crucial time period to take primary treatment for prevention of developing sight threatening corneal ulcer but 64% respondents sought treatment from improper place or person though there is a Community Health Center in close vicinity, one for every 6000 population, as well Union Health Center and Thana Health Complex in Sub-District level. So the development of awareness among farmers of using protective eye wear at job and rush to nearby health center for primary management with any history of trauma, is the main stay of prevention of agriculture related ocular trauma, its consequence corneal ulcer and blindness in Bangladesh.

To achieve the goal, a project proposed by the author “*Prevention of blindness due to agriculture ocular trauma: A nationwide campaign*”, accepted and then organized by Bangladesh Community Ophthalmological Society (BCOS); implementing

jointly with, Agriculture Extension Department, National Eye Care(NEC), DGHS and Bangladesh Medical Research Council (BMRC), in Bangladesh since 2010.

Directorate of Agriculture Extension (DAE) and Agriculture Information Services (AIS) working for raising awareness among farmers along with their routine job at grass root level through Sub-Assistant Agriculture Officers, publications and publicity including electronic media explaining the following issues:

- a) To use protecting spectacles during working time (costing only Tk.40) and its importance.
- b) Physical suffering, sight threatening, economic disaster, social and national consequence as a whole of ocular trauma.
- c) Not to neglect any episode of eye trauma even minor one, abstain from using unsterile water in eye, to visit nearest health center where facility of primary treatment is available following any ocular trauma, even with minimal eye trouble on the same day as early as possible.

A protocol on 'Primary management of ocular (cornea) trauma' developed by the author, validated by a group of cornea specialists & clinical Ophthalmologists and finally adopted and circulated by NEC through Civil Surgeons and Thana Health Administrators to all Government Health Care centers. Management of corneal injury, particularly within 12-18 hours is very important for prevention of sight threatening corneal ulcer. So the Community Health Center at close vicinity, within walking distance, and can be reached shortly, has been identified as the main point of focus for primary management of ocular trauma. Relevant topic of this learning domain 'Ocular trauma and its management during harvesting season' a chapter written by author has been included in the training module of community health care providers<sup>12</sup>. Chloramphenicol eye ointment made available at the centers. BMRC committed to assist for further research on this issue while Bangladesh Islamic Foundation assures to help development of awareness.

The program was formally inaugurated by the Advisor to the Honorable Prime Minister for Health & Family Welfare and Social Welfare, Peoples Republic of Bangladesh on 31 May 2011 at Bangabandhu International Convention Centre, Dhaka by distributing eye protecting spectacles to farmer and presenting one carton of spectacles to the Director of Agriculture Extension. So far this is

first such joint effort of Health Department with Agriculture Department for health care, more so, prevention of blindness of farmers, in this subcontinent.

Subsequently through advocacy the project of prevention and management of ocular trauma has been included in the Operational Plan (OP) of National Eye Care (2011- 2016), DGHS, Ministry of Health and Family Welfare, as new dimension for prevention of blindness in Bangladesh. All concerned like social leaders, electronic and print media, social welfare organizations, different Government Bodies, NGO, agro based pharmaceutical companies and others would come forward to help the ongoing program a success and make Bangladesh free from curse of avoidable blindness due to agriculture related ocular trauma.

For raising awareness on the issue among all the stake holders let us observe month of May as 'Agriculture Health Safety Month'.

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