

sedatives in addition to alcohol. Among the suspected clients, the group with age 20-40 years was more likely to be suspected abusers/misusers than all other age groups. Among the laxatives abusers/misusers, females were more likely to be suspected than males. While among the other OTC products, males were more likely to be suspected than females. Current guidelines in the practice of dealing with such requests recommended that pharmacists used their professional judgment in order to prevent the supply of products which are reliable to abuse/misuse and if necessary the sale of such products should be refused. A variety of methods and policies for dealing with such requests were suggested. Common policies such as: advising the client to refer to his physician, alerting staff to any potential abusers/misusers, advise the patients on the correct use, dose and abuse problem, keeping the product out of sight, or telling the abuser/misusers that the product is out of stock were the most used policies. However, such policies may encourage individuals to go to another pharmacy in the area where they may be able to obtain the products. This problem could be elevated if the pharmacists networked more frequently with one another whereby, a suspected abuser/misusers would be reported to other pharmacies in the locality. In the present survey, pharmacists indicated that approximately 78.4% of the suspicious requests came from strangers, perhaps suggesting that people may be going from pharmacy to pharmacy in order to minimize the detection of their problem, suggesting that indicated strategies to limit abuse/misuse are unlikely to be effective in the longer term. In an international study designed to explore the views of experts within the fields of pharmacy and addiction reach an agreement on best practice in the sale of over-the-counter (OTC) medicines, which are liable to misuse. Key findings include improving access to current information, improved staff training, addressing the issues of non-pharmacy outlets and internet pharmacy sites. Concerns were expressed regarding the possible conflict between commercial and customer interests.⁵ Health care professionals should be aware of abuse and misuse as potential problem and research into methods for quantification, identification and treatment should be conducted.

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References

1. Myers B, Siegfried N, Parry CD. Over-the-counter and prescription medicine misuse in Cape Town-findings from specialist treatment centers. *S Afr Med J* 2003; 93: 367-370.
2. MacFadyen L, Eadie D, McGowan T. Community pharmacists' experience of over-the-counter medicine misuse in Scotland. *R Soc Health J* 2001; 121: 185-192.
3. Tseng YL, Hsu HR, Kuo FH, Shieh MH, Chang CF. Ephedrine in over-the-counter cold medicines and urine specimens collected during sport competitions. *J Anal Toxicol* 2003; 27: 359-365.
4. Tinsley JA, Watkins DD. Over-the-counter stimulants: abuse and addiction. *Mayo Clin Proc* 1998; 73: 977-982.
5. McBride AJ, Pates R, Ramadan R, McGowan C. Delphi survey of experts' opinions on strategies used by community pharmacists to reduce over-the-counter drug misuse. *Addiction* 2003; 98: 487-497.

Gastric volvulus with identifiable cause in adults. Presentation and management

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Gastric volvulus, an abnormal rotation of one portion of the stomach around itself, is a rare condition, which is often difficult to diagnose and treat. We report our experience of patients with gastric volvulus and discuss the pathogenesis, presentation and management. In a retrospective analysis of all patients with gastric volvulus seen at Kasturba Medical College Hospital, Manipal, South India, between the period 1986-2000, the files of the patients with the diagnosis of gastric volvulus were identified and reviewed. The specific issues addressed included patients demographic details, etiology, presentation, investigations and treatment, **Table 1.** Eight patients (6 men and 2 women) with gastric volvulus were identified. The mean age was 29 years (range 18-59 years). Volvulus was secondary in 7 patients and primary in one. The underlying causes included Bochdalek diaphragmatic hernia (3 patients), eventration of diaphragm (3 patients) and a large epigastric incisional hernia (following previous perforated duodenal ulcer closure) in one patient. Two of 3 patients with large left diaphragmatic hernia with herniation of stomach, small gut, transverse colon and spleen had in addition underdeveloped lower lobe of the left lung. Five patients had organoaxial volvulus and 3 mesenteric-axial volvulus.

The presentation included recurrent colicky abdominal pain of more than 6 months (range 3 months - 1 year), which was seen in all the 8

patients with 3 of them having severe exacerbation 48 hours before presentation. Four of these also had associated vomiting. Two of the 3 patients with diaphragmatic hernia complained of noisy sounds and pain in the chest. Barium study ordered in 7 patients was suggestive of volvulus in 5 patients and was inconclusive in 2 of them with partial volvulus. The type of volvulus among the positive studies included 3 organoaxial and 2 mesenterico-axial. The upper gastrointestinal endoscopy was suggestive of volvulus in 3 of the 5 patients and the findings included dilated congested proximal stomach filled with gastric fluid, spiral twisting and constriction of stomach with inability to see the pylorus. The chest x-ray in 2 of the 3 patients who presented with diaphragmatic hernia, revealed gastric and small gut shadow with air fluid levels. Computed tomography (CT) scan was carried out in one patient with incisional hernia, which demonstrated the gastric volvulus within the hernial sac. All 8 patients underwent surgical intervention and the details of the surgical procedures are shown in **Table 1**. Two of the 3 patients with diaphragmatic hernia had defects larger than 5 cm and required prolene mesh re-enforcement after reduction of the content and partial closure of the diaphragmatic defect. There were no major complications nor postoperative deaths. The overall median hospital stay was 12 days (ranged 10-16 days). Seven of the 8 patients were followed up to 3 years and one was lost to follow up. None of these 7 patients had recurrence of their symptoms. The mean incidence of gastric volvulus is estimated to be approximately 2.6 new patients per million population per year.¹ Gastric volvulus occurs predominantly in older adults

although it has been described in children and adolescents.^{1,2} Primary gastric volvulus is one which occurs spontaneously without any diaphragmatic derangement or other intra-abdominal abnormality and may result due to gastric ligamentous lengthening along with changes in visceral pressure.^{1,2} Approximately 30% of gastric volvulus are primary in nature^{1,2} and was seen in one of our patient who was found to have lax ligaments and relatively mobile spleen. However, volvulus is more commonly secondary as seen in most of our patients and may be due to causes such as paraesophageal hiatal hernia, congenital or traumatic diaphragmatic hernia, eventration of diaphragm, abdominal bands or adhesions.^{1,2} Anatomically, 3 types of gastric volvulus are recognized: organoaxial, mesenterico-axial and mixed.

The signs and symptoms of gastric volvulus depend upon the rapidity of onset, degree of rotation and amount of obstruction. Recurrent abdominal pain, noisy sound and pain in the chest are clinical symptoms seen in chronic volvulus but vomiting with severe pain may indicate an acute exacerbation.¹ The diagnosis of gastric volvulus can be difficult. In this series the most common investigations carried out were barium contrast study and endoscopy. Chest x-ray and CT scan of the abdomen were performed in selected cases. Barium studies provided the greatest yield being diagnostic in 5 out of 7 patients. Endoscopy was diagnostic in 3 out of 5 patients. Plain chest x-ray suggested volvulus of the stomach in 2 patients. Computed tomography scan carried out in one patient with ventral hernia delineated the nonstrangulated volvulus within the sac. Ultrasound

Table 1 - Demographic details, predisposing cause and treatment.

Case	Age	Gender	Predisposing cause	Type	Treatment
1	22	female	Eventration of diaphragm	Mesenterico-axial partial	Reduction of contents. Plication of diaphragm
2	33	male	Bockdalek hernia (left side) > 5 cm	Mesenterico-axial complete	Prolene mesh plasty (thoraco abdominal)
3	18	male	Bockdalek hernia (left side) > 5 cm	Mesenterico-axial complete	Prolene mesh plasty (thoraco abdominal)
4	20	male	Eventration of diaphragm	Organoaxial partial	Plication of diaphragm
5	24	male	Bockdalek hernia (left side) < 5 cm	Organoaxial complete	Primary closure of defect. No mesh, abdominal approach
6	59	female	Left phrenic nerve palsy	Organoaxial complete	Plication of diaphragm
7	21	male	Lax gastric ligaments mobile spleen	Organoaxial partial	Anterior gastropexy
8	48	male	Large epigastric incisional hernia	Organoaxial partial	Prolene mesh hernioplasty

All 8 patients underwent anterior gastropexy at the proximal and distal end of stomach in addition to treatment of primary underlying cause.

has been reported to be useful where the volvulus appears as a constriction between dilated upper stomach and lower stomach body. This constriction termed the "peanut" sign loosens once the volvulus is treated.

Treatment of gastric volvulus has changed in recent decades.¹ Surgical treatment includes diaphragmatic hernia repair, division of bands, simple gastropexy, gastropexy with division of gastrocolic omentum (Tanner's operation), partial gastrectomy, gastrojejunostomy (Opolzer's operation) and repair of eventration of diaphragm. Open surgical reduction with or without gastropexy has been the traditional treatment. However, in view of the magnitude of surgical insult in a predominantly elderly population, a conservative management policy has often been pursued by some, particularly in chronic volvulus.¹ In our patients who were predominantly of younger age group and had chronic symptoms, surgical intervention in the form of treating the underlying cause and gastropexy appeared appropriate and effective. In recent years though, less invasive techniques such as percutaneous endoscopic gastrostomy (PEG) placement and laparoscopy surgery have become possible.^{3,4} Recent reports also indicate successful treatment of eventration of diaphragm thoracoscopically.⁵ Surgical repair however, is believed to be superior to PEG placement as the latter alone may not prevent recurrent volvulus.¹ Laparoscopic approach is reported to have fewer complications and significant reduction in hospital stay.⁴ Hence, it may be particularly useful in treating elderly patients with significant co-morbidity who would have previously been treated conservatively.¹ In patients managed conservatively, the risk of future strangulation and death exists. Mortality rates of 30-50% have been reported for acute volvulus, the major cause of death being strangulation, leading to necrosis, perforation and hypovolemic shock.^{1,2}

In summary, gastric volvulus is a rare but potentially fatal surgical emergency. Recurrent upper abdominal pain, vomiting, chest discomfort may suggest a possible diagnosis, which should be confirmed by contrast studies and or endoscopy. In younger age group diaphragmatic derangements appears to be the frequently encountered underlying cause. Surgical treatment of underlying cause and gastropexy has been effective in alleviating the symptoms and in preventing recurrence.

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References

1. Teague WJ, Ackroyd R, Watson DI, Devitt PG. Changing patterns in the management of gastric volvulus over 14 years. *Br J Surg* 2000; 87: 358-361
2. Wasselle JA, Norman J. Acute gastric volvulus: pathogenesis, diagnosis and treatment. *Am J Gastroenterol* 1993; 88: 1780-1784.
3. Ghosh S, Palmer KR. Double percutaneous endoscopic gastrostomy fixation: an effective treatment for recurrent gastric volvulus. *Am J Gastroenterol* 1993; 88: 1271-1272.
4. Harinath G, Senapati PS, Pollitt MJ, Ammori BJ. Laparoscopic reduction of an acute gastric volvulus and repair of a hernia of Bochdalek. *Surg Laparosc Endosc Percutan Tech* 2002; 12: 180-183.
5. Hacıbrahimoglu G, Karamustafaoglu A, Cevik AG, Bedirhan MA. Video-assisted repair of an eventrated left hemidiaphragm. *Thorac Cardiovasc Surg* 2002; 50: 101-102.

Preoperative precision value of thyroid fine needle aspiration in thyroid surgical resection candidates

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The 4-7% prevalence of thyroid nodules in general population increases with age, although malignancies of the thyroid gland more frequently threaten both younger adults (under 21 years of age) and elderly people (>40 years of age). Approximately 5% of all thyroid nodules are malignant and papillary carcinoma is the most prevalent neoplasm, nevertheless, complete evaluation of every thyroid nodule is necessary.¹ To assess thyroid nodule, there are several options including thyroid function tests, radioactive scan, ultrasonography, and exploration and making pathologically diagnosis.

Practice guidelines suggest that an initial fine needle aspiration (FNA) is more diagnostically helpful and cost benefit than other types of exploration.² Fine needle aspiration is highly recommended for all palpable solitary or dominant nodules, independent of their size. Despite such guidelines, a recent study from the United States of America reported that in 1996, FNA was only used as the initial procedure in 53% of thyroid nodule cases³ and it is still almost unfamiliar to use FNA in extensive number of patients and more unfamiliar to make decision on basis of FNA in underdevelopment countries similar to Iran. On the other hand, FNA is a powerful diagnostic tool in the hands of skilled operator and when interpreted by an