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## Contents



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# Author Guidelines

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The abstract should not exceed 300 words and convey simply what was accomplished, the primary findings, and how the work was interpreted. The structure of the abstract should include context, objectives, materials and methods, results, and a conclusion. Case reports and review paper abstracts may not be structured. Three to five keywords pertinent to the topic should be listed beneath the abstract.

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1. Hou WR, Hou YL, Wu GF, Song Y, Su XL, Sun B, et al. cDNA, genomic sequence cloning and overexpression of ribosomal protein gene L9 (rpL9) of the giant panda (Ailuropoda melanoleuca). Genet Mol Res. 2011;10: 1576-1588.
2. Devaraju P, Gulati R, Antony PT, Mithun CB, Negi VS. Susceptibility to SLE in South Indian Tamils may be influenced by genetic selection pressure on TLR2 and TLR9 genes. Mol Immunol. 2014 Nov 22. pii: S0161-5890(14)00313-7. doi: 10.1016/j.molimm.2014.11.005.

## Chapter in a book

1. Hansen B. New York City epidemics and history for the public. In: Harden VA, Risse GB, editors. AIDS and the historian. Bethesda: National Institutes of Health; 1991. pp. 21-28.

## Book

1. Thomas SHL, White J. Poisoning. In: Colledge NR, Walker BR, Ralston SH. Davidson's principles & practice of medicine. 22nd edn. London: Churchill Livingstone, 2014: 205-230.
2. Bates B. Bargaining for life: A social history of tuberculosis. 1st ed. Philadelphia: University of Pennsylvania Press; 1992.

## Internet

1. Frontier Medical College Abbottabad, Pakistan. Available at: http://www.fmc.edu.pk/aboutus.php. Accessed October 2011.
2. Ferro JM, Canhao P. Etiology, clinical features, and diagnosis of cerebral venous thrombosis. Available at: https://wwwuptodate.com. Accessed August 2018.

## Thesis/Dissertation

1. Wells A. Exploring the development of the independent, electronic, scholarly journal. M.Sc. Thesis, The University of Sheffield. 1999. Available from: http://cumincad.scix-.net/cgi-bin/works/Show?2e09

## Scientific or technical report

1. Akutsu T. Total heart replacement device. Bethesda MD: National Institutes of Health, National Heart and Lung Institute; 1974 Apr Report No: NIH-NHLI-69-2185-4.

## Accepted unpublished material

1. Khan MAH, Majumder I, Hoque MM, Fariduddin M, Mollah FH, Arslan MI. Lipid profile in hypothyroid patients: A cross-sectional study. Medicine Today. In press.

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EDITORIAL

# Mental health challenges in immigrants

Immigration is an essential topic of discussion in today's society, with millions of people migrating to new countries every year in search of better opportunities, safety, and security. However, immigration can be a traumatic experience for many individuals, leading to various mental health challenges. Mental health issues in immigrants are often overlooked or underdiagnosed, leading to negative consequences for individuals, families, and communities. One of the primary reasons for mental health challenges in immigrants is the experience of acculturation stress. Acculturation stress refers to the psychological and emotional challenges of adapting to a new culture, language, and lifestyle. Studies have shown that immigrants are at a higher risk of developing mental health problems such as depression, anxiety, and post-traumatic stress disorder (PTSD) due to acculturation stress (1). Research has shown that immigrants are more likely to develop mental health disorders than the general population. A study by Bhugra and Jones (2001) found that immigrants had a higher prevalence of mental health disorders than non-immigrants, with rates ranging from 11% to 28%. Furthermore, immigrants are less likely to seek help for their mental health problems for various reasons, including language barriers, cultural stigma, lack of knowledge about available resources, and fear of deportation (2). Moreover, immigration can be a traumatic experience, particularly for refugees and asylum seekers who flee war, persecution, and violence. The trauma of leaving behind their homes, families, and friends and the challenges of adapting to a new culture can lead to mental health issues such as depression, anxiety, and PTSD(3). Language barriers and limited access to healthcare services can also exacerbate mental health issues in immigrants. Many immigrants struggle to communicate effectively with healthcare providers due to language barriers, leading to misdiagnosis and under-treatment of mental health problems (4). Moreover, limited access to mental health services in some countries can make it difficult for immigrants to seek help when needed. Addressing mental health challenges in immigrants requires a multi-faceted approach that includes individual and systemic interventions. Individual interventions should focus on increasing awareness about mental health issues and promoting help-seeking behaviors among immigrants. This can be done through community outreach programs, counseling services, and support groups. At the systemic level, policymakers and healthcare providers must work to address the root causes of mental health challenges in immigrants. This includes addressing language barriers, improving access to mental health services, and addressing the social determinants of health that contribute to mental health issues in immigrants (4).

In conclusion, mental health challenges in immigrants are a significant public health issue that requires urgent attention. Addressing these challenges requires a comprehensive approach that includes both individual and systemic interventions. By

working together, we can ensure that immigrants receive the mental health support they need to thrive in their new communities.

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# The positions and directions of the mental foramina of dry mandibles in Bangladesh

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## *Abstract*

***Background:*** *The mental foramen is an important anatomical and clinical landmark for undertaking a successful mental nerve block during different clinical and surgical procedures.* ***Objectives:*** *This study aimed to document the positions and directions of the mental foramina in dry mandibles from Bangladesh.* ***Materials and methods:*** *In this cross-sectional observational study, 150 mental foramina in 75 dry mandibles were analysed to ascertain the directions and positions of mental foramina in the adult Bangladeshi population. Visual inspection of the two premolars and the 1st molar teeth were used to establish the location of the mental foramen. The directions were determined by drawing a measured box around the foramen and inserting a long thin broomstick into the foramen from the lateral side of the mandible.* ***Results:*** *The percentages of the positions of the mental foramina were found between the 1st and 2nd premolars (25.33%), below the apex of the 2nd premolar teeth (53.33%), and between the 2nd premolar and the 1st Molar teeth (21.33%). The mental foramina's direction was noted towards the posterior (12%) and posterosuperior (88%).* ***Conclusion:*** *The study of the mental foramen will be helpful for surgeons to localise the mental neuro vasculature when planning the mental nerve block and for modern surgical procedures requiring a detailed and precise study of the morphology and morphometry of the area.*

***Keywords:*** *Mandible, mental foramen, position, direction*

## Introduction

The end of the mandibular canal is represented by the mental foramen, a rounded or oval aperture on the mandible's anteromedial side.

**Fig 1.** The mental foramen

The inferior alveolar nerve and artery, which have already passed through the mandibular canal, emerge through the mental foramen as the mental nerves and vessels that supply the lower teeth, lip, gingiva, and lower face (1, 2). The mental foramen is typically situated parallel to the 2nd premolar tooth or between the apexes of the 1st and 2nd premolar teeth (3, 4). It's common to see variations in the mental foramen's direction (4, 5, 6).

The position and direction of the mental foramen facilitate surgical, local anaesthetic, and other invasive oral and maxillofacial surgeries. Periodontal surgery, lower tooth flap procedures, mandibular premolar apical curettage, retrograde amalgam fillings, surgical orthodontics, and other treatments involving the lower lip all depend on the precise location of the mental foramen. However, the mental foramen is typically hard to find, as there is no precise anatomical marking that can be used clinically or palpated externally. For example, while performing apical curettage on mandibular premolars, dentists must consider how the lower premolars and the body of the ramus relate to the mental foramen to avoid damaging the mental nerve. Understanding the anatomy of this region is essential for performing an effective nerve block and avoiding injuries to the neurovascular bundles. Injury to the mental nerve may result in temporary or permanent (thermal and tactile) alterations in the regions it innervates (7, 8, 9). This study aimed to evaluate the positions and directions of the mental foramen in Bangladeshi people to help with surgical interventions and anaesthetic block procedures.

## Materials and Methods

This cross-sectional observational study was conducted in the Department of Anatomy, Ad-din Akij Medical College, Khulna, Bangladesh from January 2021 to July 2021. Total 75 dry adult mandibles from the Bangladeshi population, irrespective of their sex, all of which matched our criteria for inclusion in the study (i.e., good occlusion and adequate lower dentition), were selected from a total of 145 mandibles obtained for the project (5, 10). Before taking the measurements, Each mandible was positioned on a horizontal plane where it made the maximum contact with its lower border, and pressure was applied vertically on the molars (10, 11).

Using a visual inspection, the front margin of the mental foramen was checked for its position with the lines extending downward from the 1st and 2nd premolar and 1st molar teeth. Concerning those lines, Tebo and Telford (12). classified the positions into six categories as follows:

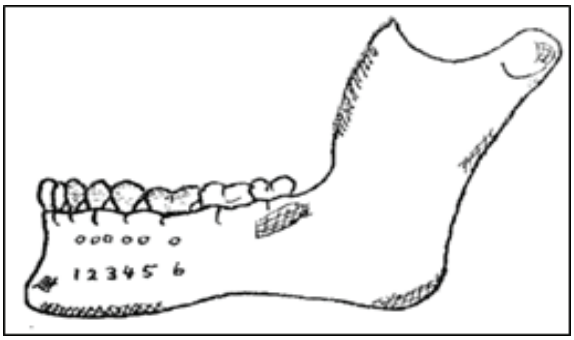


**Fig 2.** Illustrates the position of the mental foramen to the lower teeth (Adopted from Tebo and Telford)

- Position 1 (P1) - Anterior to the 1st premolar tooth
- Position 2 (P2) - Below the apex of the 1st premolar tooth
- Position 3 (P3) - Between two premolar teeth
- Position 4 (P4) - Below the apex of the 2nd premolar tooth
- Position 5 (P5) - Between the 2nd premolar and the 1st molar teeth
- Position 6 (P6) - Below the apices of the 1st molar tooth

A measured box was drawn around each mental foramen to detect the direction of the foramen. A vertical and horizontal line was drawn inside the measured box, dividing it into four equally smaller boxes. The vertical and horizontal lines, respectively, denote superior-inferior and anterior-posterior directions. A long thin broomstick was inserted into the foramen from the lateral part of the mandible. The measured box was visually examined to determine which way the broomstick was pointing (13).

**Fig 3.** Measured box around the mental foramen

The outcomes of the different directions or courses of the foramina were then divided into eight categories as follows:

- Direction 1 (D1) - Anteriorly
- Direction 2 (D2) - Antero-inferiorly
- Direction 3 (D3) - Inferiorly
- Direction 4 (D4) - Infero-posteriorly
- Direction 5 (D5) - Posteriorly
- Direction 6 (D6) - Postero-superiorly
- Direction 7 (D7) - Superiorly
- Direction 8 (D8) - Supero-anteriorly

These measurements of the position and direction of the mental foramina were carried out on both sides of the mandibles. The data was analyzed by using computer-based statistical software, SPSS 23.0.0 version (SPSS Inc, Chicago, IL, USA), and the results were compiled in the table, expressed as frequency & percentage.

## Results

The mental foramen position in 40 mandibles (53.33%) was noted below the apex of the 2nd premolar teeth (P4). In 19 mandibles (25.33%), it was observed between the 1st and 2nd premolars (P3), and in 16 mandibles (21.33%) between the 2nd premolar and the 1st molar teeth (P5) (Table 1). No case was noted in positions P1, P2, and P6. This study did not reveal any variations between the foramen's position on the right or left side of the mandible. The direction of mental foramen was found postero-superiorly (D6) from its opening in

**Table 1:** Distribution and percentage of the mental foramina's positions.

| Position | Frequency | Percentage |
|---|---|---|
| **P1** | 0 | 0 |
| **P2** | 0 | 0 |
| **P3** | 19 | 25.33 |
| **P4** | 40 | 53.33 |
| **P5** | 16 | 21.33 |
| **P6** | 0 | 0 |

66 mandibles (88%). In 9 mandibles (12%) the direction was noted towards posteriorly (D5) (Table 2). The direction was the same on either side of each bone.

**Table 2:** Distribution and percentage of the mental foramina's directions.

| Direction | Frequency | Percentage |
|---|---|---|
| **D1** | 0 | 0 |
| **D2** | 0 | 0 |
| **D3** | 0 | 0 |
| **D4** | 0 | 0 |
| **D5** | 9 | 12 |
| **D6** | 66 | 88 |
| **D7** | 0 | 0 |
| **D8** | 0 | 0 |

## Discussion

This study discovered that 53.33% of the mental foramina were aligned with the long axis of the 2nd premolar tooth (P4). This is in agreement with Fabian's finding of 45% in 100 Tanzanian mandibles and Haghanifer et al.'s work on an Iranian population, where 49.2% were found in line with the long axis of the (P4) (3, 14). The research conducted by Amorim et al. on adult Brazilian mandibles and Igbigbi et al. on adult Malawian mandibles are likewise comparable to this (10, 15). With a proportion of 25.33%, the site of the mental foramen between the 1st and 2nd premolar teeth (P3) was the second-most typical position identified in this study. The 3rd most common position was between the 2nd premolar and the 1st molar teeth (P5) with a percentage of 21.33%. These results are similar to other researchers' discoveries that the mental foramen's position and orientation vary (15, 16). The causes for these anatomical variances of the mental foramen in this population could be due to inheritance, the way of evaluating the mandibles, the development of teeth, or even preservation or preparation of the specimen. There were no cases where the foramen's position on the right or left side varied. The mental foramen's direction was examined, and the findings revealed that the posterosuperior (D6) direction is the most prevalent, followed by the posterior (D5) direction. These findings also correspond with the work of Philips et al., where out of 75 adult mandibles examined, posterosuperior was the most usual mental foramen direction. The findings of the current study add to the knowledge of the mental foramen for the approach of the mental nerve and have consequences for dental professionals and maxillofacial surgeons.

## Conclusion

The recent trend of replacement of missing teeth by dental implants and the increasing frequency of orthognathic surgeries have highlighted the clinical significance of mental foramen. Variations in the mental foramen frequently go unreported and misdiagnosed. However, special attention should be paid to the location of the mental foramen to achieve an effective nerve block and prevent post-procedural neurovascular problems in the mental region. The position and direction of the mental foramen varied, as was seen in numerous other studies.

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# The Pattern of lipid abnormalities in Type-2 Diabetes Mellitus Patients Attending a private medical college hospital

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## *Abstract*

***Background:*** *Diabetes mellitus (DM) is a group of metabolic disorders characterised by hyperglycemia resulting from a defect in insulin secretion, insulin action, or both. It is associated with chronic hyperglycemia and carbohydrate, lipid, and protein metabolism disturbances.* ***Objectives:*** *We aimed to research the association between serum lipid profile and blood glucose so that early detection and treatment of lipid abnormalities can minimise the risk for atherogenic cardiovascular disorder and cerebrovascular accident in patients with type 2 diabetes mellitus.* ***Materials and Methods:*** *This is a cross-sectional study carried out to diagnose dyslipidemia among patients with DM at Ad-din Akij Medical College Hospital over a period of 6 months study among 110 diabetic patients selected by nonrandom purposive sampling after fulfilling inclusion and exclusion criteria.* ***Result:*** *In this study, among 110 study subjects with type 2 DM, the prevalence of dyslipidemia was 72.7%, and among those, 30% had abnormalities in a single parameter, and 70% had abnormalities in multiple parameters. Hypertriglyceridemia (70.8%) was the most prevalent among patients with abnormalities in a single parameter. Among patients with abnormalities in multiple parameters, high TG & low HDL-C dyslipidemia (39.2%) was most prevalent. A total of 26.7% of patients were found to have abnormalities in all the parameters of the lipid profile.* ***Conclusion:*** *Dyslipidemia is high in number in type 2 diabetic patients and is also a significant risk factor for cerebrovascular and cardiovascular disease. To reduce this risk, healthcare professionals should provide regular follow-up and proper advice and ensure primary prevention of vascular complications.*

***Keywords:*** *Diabetes Mellitus, various types of lipid abnormalities*

## Introduction

Diabetes mellitus is a long-term health condition that affects how our body metabolises glucose and other energy sources, the later development of blood vessels, and neurological complications (1). Symptoms may include polydipsia, polyuria, polyphagia, weight loss, fatigue, and blurred vision. Those with diabetes are more likely to develop atherosclerosis in the vessels, increasing the risks for cardiovascular, cerebrovascular, and peripheral vascular diseases. Numerous causes play a part in diabetes' origin, from autoimmune destruction of the pancreas's beta cells resulting in insulin deficiency. It is an extensive problem affecting global health; it is estimated that around 200 million people worldwide have diabetes (over 5% of the adult population (2, 3). Various factors affect type 2 diabetes's pathogenesis, including lifestyle choices and environmental concerns.

The atherogenicity is associated with small and dense LDL cholesterol particles (4). A diet rich in saturated fats, smoking, lifestyle, and increased visceral fat raises LDL cholesterol levels (5). The lowering of LDL cholesterol levels leads to reducing the risk of coronary heart disease. The increase in serum cholesterol levels (HDL) raises the risk of incidence of coronary heart disease (5). Low HDL cholesterol also increases the risk of cardiovascular disease (6).

## Materials and Methods

This was a cross-sectional study, the sampling technique was convenient and carried out in the Medicine OPD, Ad-din Akij Medical College Hospital, and Khulna from January 2022 to June 2022. We included those who reported having diabetes for 6 months or more regardless of taking oral hypoglycemic agents or insulin. Patients were diagnosed as type 2 diabetic by their primary physicians. We excluded subjects with other chronic illnesses like hypertension, chronic kidney and liver disease, those who were pregnant, and anyone taking lipid-lowering drugs. In this way, a total number of 220 patients were enrolled at first. After fulfilling inclusion and exclusion criteria finally, 110 patients aged 30 years or above were taken as the study population. Blood samples were collected and the serum lipid profile was estimated by Autoanalyzer. SPSS, Microsoft Excel, and Microsoft Word were used in this study.

Both male and female patients aged over 30 years and have a diagnosis of type 2 DM were included in the study. A written consent was obtained from each patient, using an informed consent form. The research was conducted in full compliance with ethical principles.

## Results

In this study among 110 individuals, the prevalence of dyslipidemia (at least one abnormal lipid fraction) was 80 (72.7%) (Figure 1). 24 (30%) individuals with dyslipidemia had abnormalities in single lipid parameters and 56 (70%) had multiple abnormal lipid parameters (Table 1). Hypertriglyceridemia was observed in 70.8% of cases among individuals with single lipid parameter abnormality. Combined high TG & low HDL-C level was found in 39.2% of cases in individuals with multiple abnormal lipid parameters. 26.7% of individuals were identified to have abnormalities in all the lipid parameters.

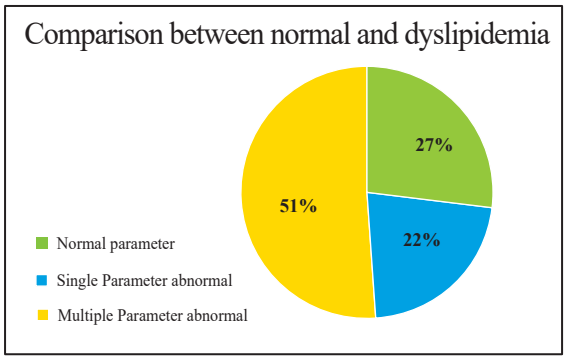


**Fig 1.** Lipid status among type 2 Diabetes mellitus patients

**Table 1:** Distribution of individuals with a single abnormal lipid parameter (n=24)

| Lipid Index | Number | Percentages |
|---|---|---|
| High TG | 17 | 70.8 |
| Low HDL- C | 7 | 29.1 |
| Total | 24 | 100 |

**Table 2:** Distribution of individuals with a single abnormal lipid parameter (n=80)

| Lipid Index | Number | Percentages |
|---|---|---|
| High TG &low HDL -C | 22 | 39.2 |
| High TG, high TC & high LDL-C | 19 | 33.9 |
| High TG, high TC, high LDL-C & low HDL-C | 15 | 26.7 |
| Total | 56 | 100 |

**Table 3:** Distribution of respondents according to social background

| Social background | Number | Percentage |
|---|---|---|
| Urban | 42 | 38.1 |
| Rural | 68 | 61.8 |
| Total | 110 | 100 |

**Table 3,** shows the distribution of respondents according to social background. In our study, 38.1% of respondents were urban, and 61.8% of respondents were rural residents.

## Discussion

Dyslipidemia is a serious contributor to cardiovascular disease, stroke, and type 2 diabetes, so it's important to be aware of its potential impact (6). Although it's dangerous, it is a risk factor that can be modified through lifestyle changes and medications. This disorder is characterized by an irregular lipid profile, which may include higher levels of plasma cholesterol, triglycerides, or both, or a decrease in high-density lipoprotein cholesterol (HDL-C) (7). The American Heart Association advises that a blood cholesterol level of 200 mg/dl, Triglycerides over 150 mg/dl, High-Density Lipoprotein Cholesterol (HDL-C) under 40 mg/dl, and Low-Density Lipoprotein Cholesterol (LDL-C) over 130 mg/dl are all considered signs of dyslipidemia (7) . In our study, 38.1% of respondents were urban and 61.8% of respondents were rural residents. Most of the patients coming to this medical college hail from rural and low social economic conditions because of the philanthropic nature of this institution. Also, the geographic location of these institutions attracts patients from rural areas. So, several rural respondents were more in our study.

In our study, we found that the prevalence of dyslipidemia in type 2 diabetic patients is very high (72.7%). This was similar to another study done in South Africa where they found the prevalence of dyslipidemia was 90.3 % (8). This result is consistent with another study in Nigeria (9) .In a Bangladeshi study showed that dyslipidemia was found to be very highly prevalent (94%) (9). Among individuals who have dyslipidemia with a single lipid profile parameter, serum TG was the most prevalent

(70.8%) whereas among individuals with abnormalities in multiple lipid profile parameters, combined High TG & low HDL-C was observed at the highest frequency (39.2%). Sultana MS et.al also found hypertriglyceridemia combined with low HDL-C is the most common form of multiple dyslipidemias. But in a Pakistani study, the researcher found the highest number of dyslipidemias was LDL-C (8). Age, duration of diabetes, HbAlc, and drug compliance may all affect variables such as lipid profile. It appears that the food we eat can have an effect on our lipid profile especially food with a high glycemic index may also affect lipid abnormalities (10).

## Conclusion

Despite some limitations such as the purposefully chosen institution and relatively small sample size, this study has given us a foundational understanding that dyslipidemia is widespread among individuals with type 2 diabetes. The most common abnormality of dyslipidemia was found to be serum triglycerides, and the most frequent form of dyslipidemia with multiple abnormal parameters had abnormal serum triglycerides and serum high-density lipoprotein cholesterol (HDL-C) levels. This highlights the importance for medical professionals to pay attention to dyslipidemia when caring for diabetic patients.

**Source(s) of Support: Nil**

**Conflict of Interest: Nil**

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# Effects of ketorolac and α-tocopherol combination on formalin-induced paw edema in rats

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## *Abstract*

***Background:*** *Alpha-tocopherol (αT) is a fat-soluble antioxidant that protects cell membranes and other cellular components from oxidative damage. In addition to its antioxidant properties, alpha-tocopherol has also been found to possess anti-inflammatory activities in many studies. But a comparison of these effects with similar effects of ketorolac tromethamine (KT) and their combination has not been established.* ***Objectives:*** *To assess the impacts of αT and KT on inflammation and compare them with the varieties of αT and KT in rat models.* ***Materials and Methods:*** *This experimental study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. For this, 20 (twenty) Long Evan's rats of both sexes were divided into control (with 5mL/kg normal saline) and experimental (with 500mg/kg αT; with 10mg/kg KT; with αT+KT) groups with 5 (five) rats in each group. All the drugs and vitamins were administered intraperitoneally in a single dose just one hour before the formalin test. To evaluate the treatments' effect on inflammation, rats' right hind paws were injected subcutaneously into the plantar surface with formalin (50 µL, 2.5%) except for the control group. The paw volume was measured by using a water plethysmometer. Statistical analysis was done by ANOVA, followed by Bonferroni post hoc test. In the interpretation of results, $p \leq 0.05$ was considered significant.* ***Results:*** *αT mediated reduction in inflammation was not statistically significant. KT lowered the inflammation more than αT, and it was statistically significant. On the other hand, the combination of αT and KT reduced the inflammation more significantly ($p \leq 0.001$).* ***Conclusion:*** *From this study, it may be concluded that the variety of αT with KT is more effective in reducing inflammation than those in their administration.*

***Keywords:*** *Inflammation, α-tocopherol, ketorolac, formalin, paw oedema.*

## Introduction

Inflammation is a local response of living mammalian tissues to injury. It is a body's defence reaction to eliminate or limit the spread of injurious agents. There are various components to an inflammatory reaction injury. Oedema formation, leukocyte infiltration, and granuloma formation represent such components of inflammation (1). Oedema formation in the paw results from a synergism between various inflammatory mediators, increasing vascular permeability and blood flow (2). Even though different allopathic drugs like immunosuppressants, NSAIDs, corticosteroids, and antihistamines have been used till now, their potential side effects limit their use. There is a growing concern about developing a new, safe, potent, and less toxic anti-inflammatory drug. Hence, there is a need to explore more naturally available alternatives so that their therapeutic values can be assessed and expanded (3, 4). Vitamin E is a lipophilic vitamin, and α-tocopherol is the most physiologically active of its eight naturally active forms (5, 6). Alpha-tocopherol (αT) can help to reduce inflammation by inhibiting the production of pro-inflammatory cytokines and enzymes (7). αT's antinociceptive activity is thought to be related to a mechanism that suppresses anti-inflammatory actions, and it is likely to be helpful in treating both acute and chronic pain. Additionally, it has been claimed that αT may operate with NSAIDs to reduce gastrointestinal inflammation and discomfort in people suffering from peptic ulcer disease (5, 8, 9).

Ketorolac tromethamine (KT) is a potent nonsteroidal anti-inflammatory medication (NSAID) that is often used to treat severe acute pain caused by inflammation that needs urgent analgesia, such as postoperative pain, renal colic, arthritis, lumbago, headache, and cancer pain (10, 11). Studies have been conducted worldwide to find analgesic alternatives that can replace or, at the very least, shorten the duration of drug therapy, to minimise any adverse effects of the medicine (12, 13).

## Materials and Methods

This experimental study was conducted in the Pain Laboratory of the Department of Physiology after receiving permission from the Institutional Review Board (IRB, No. BSMMU/2015/5994) of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, from March 2015 to February 2016. All experiments and animal care were performed according to the guidelines outlined in the 'Manual for Care and Use of Laboratory Animals' by the Animal Experimentation Ethics Committee (AEEC) of the International Center for Diarrhoeal Disease Research, Bangladesh (icddr,b 2002) (14).

*Procurement and maintenance of animals:*

Twenty (20) healthy adult Long Evans rats weighing 180 to 250 g of both sexes (15, 16, 17) were obtained from the animal house of the Bangladesh University of Health Sciences (BUHS), Dhaka. All the rats were kept in the pain laboratory of the Department of Physiology, BSMMU, where they were housed in specially built plastic cages with six rats per cage under a 12/12 hour light/dark cycle (18, 19). The ambient room temperature was maintained at around 27 to 28°C, corresponding to the thermo-neutral zone for rodents (20, 21). All the rodents had free access to standard laboratory food and cooled, boiled water (22). They were kept there for seven consecutive days for environmental acclimatisation before the experiment. To avoid circadian influences, all the experiments were performed during day time between 08:00 and 16:00 hours (7, 8).

*Dose schedule:*

The α-tocopherol (Biopharma, Bangladesh) and Ketorolac tromethamine (Novartis, Bangladesh) were obtained in granular form and dissolved in normal saline (5 ml/kg body weight). Based on drugs and vitamin administration, all the rats have divided into four(4) groups (5 rats/group); the control group received only normal saline (5 ml/kg body weight)(22), Vitamin treated group received α T (500mg/kg body weight) (8), ketorolac treated group received ketorolac tromethamine (KT) (10mg/kg body weight) (15), the combination-treated group received αT (500mg/kg body weight) and KT (10mg/kg body weight) in equal volume to that of normal saline, respectively. Just an hour after intraperitoneal (i.p) (8, 23) administration of drug and vitamin, all the rats underwent a formalin test.

*Formalin-induced paw oedema test:*

To make the rats accustomed to the test environment, all the rats were placed in the observation chamber (34X34X34cm3) of the plexiglass formalin box in pairs for fifteen(15) minutes daily for four (4) consecutive days and singly for three (3) days before the test(10, 24). On the day of the experiment, each rat was intraperitoneally injected with normal saline, or αT or KT or combinations thereof, following the experimental paradigm being followed. Just one (1) hour later, the rat was restrained manually by a thick towel, and fifty (50) µL of dilute (2.5%) formalin was injected subcutaneously (24, 25) into the planter aspect of the right hind paw with an insulin syringe. Immediately after that, the animal was placed in the observation chamber of the plexiglass formalin test box, and pain behaviours were observed for a consecutive sixty (60) minutes. Immediately after completing the formalin test, all the rats were sacrificed. After sacrifice, inflammation was measured by a formalin-induced paw oedema test in all the groups. The hind paws of the sacrificed rat of all the groups were cut at their knee joints by sharp scissors. Then the paw volume was measured using a water plethysmometer (20, 26).

Paw volume = (amount of water column after paw immersion – amount of water column before paw immersion.)
Net oedema volume was calculated by subtracting the left from the right paw volume.
Net oedema volume = right paw volume – left paw volume.

**Figure 1**

**Figure 2**

Results were expressed as mean±SEM, and the data were statistically analysed by ANOVA, followed by Bonferroni post hoc test. In interpreting results, $p \leq 0.05$ was accepted as the significance level.

## Results

In this study, the differences in the mean values as well as the percent reduction of oedema volume among the groups were statistically not significant except in the control group vs ketorolac treated group and control group vs combinedly (αT+KT) treated group, where the difference of the mean value of this variable was statistically significant ($p \leq 0.01$).

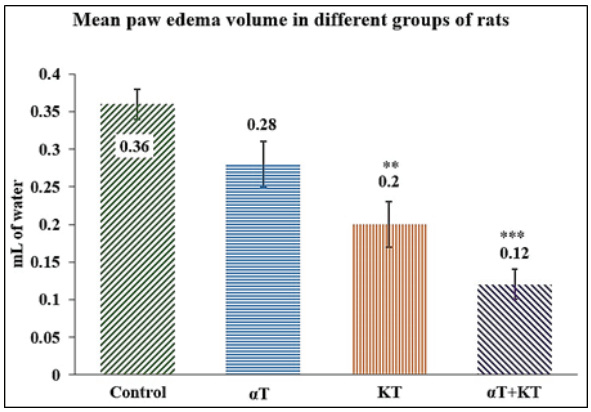


**Figure 3:** Reduction in oedema volume in paw oedema test in different groups of rats. Each bar symbolises mean±SE for five rats. ** = $p \leq 0.01$, *** = $p \leq 0.001$, compared to those of control. αT = α-tocopherol; KT = Ketorolac tromethamine.

## Discussion

Tissue damage and injury are always associated with pain and inflammation. In formalin-induced paw oedema, the inflammatory reactions are mediated by prostaglandin, serotonin, histamine, bradykinin, and cytokines, such as interleukin-1 beta, interleukin-6 tumour necrosis factor-alpha eicosanoids, and Nitric Oxide (27). Inflammation was not significantly lower in αT supplemented group, as evidenced by reduced paw oedema volume compared to that of the control. Many investigators from different countries also reported a similar observation in animal models (28, 29, 30) and human models (31). In this study, inflammation was significantly decreased after combined administration of αT and KT than that of controls, as evidenced by reduced oedema volume in formalin-induced paw edema. Moreover, this variable was significantly lower after combined administration of αT and KT than their individual intervention as shown by more reduction of formalin induced paw edema. However, no published data were available to compare all these findings as mentioned earlier for combined administration of αT with KT.

## Conclusion

In summary, single-dose administration of α-tocopherol failed to show a significant anti-inflammatory effect. On the other hand, ketorolac tromethamine and its combination with α-tocopherol showed anti-inflammatory effects. However, their combined administration showed a more significant anti-inflammatory effect than the individual administration of ketorolac. Therefore, it is possible to deduce that a combination of α-tocopherol and ketorolac tromethamine may reduce inflammation to a greater extent than their administration alone. This data may apprise the clinicians and the general population about using α T along with KT for better inflammation management. However, a further experimental study is needed to elucidate these effects' exact components and mechanisms.

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# Histopathological diagnosis of gastric biopsies in correlation with Endoscopy in Bangladeshi people

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## *Abstract*

***Background:*** *The diagnosis of upper GIT tract lesions sometimes involves endoscopy-guided biopsies. It is a daycare procedure, safe and economical. In the early stages of GIT cancer, most patients are asymptomatic or lack particular symptoms, and they are frequently detected in an advanced stage. This is diagnosed with a punch biopsy of the lesion under endoscopic guidance and histological analysis. Upper GIT endoscopy, combined with biopsy, plays a vital role in diagnosing these disorders for further management.* ***Objectives:*** *This study aimed to assess the histological diagnosis of stomach endoscopic biopsies and compare the endoscopic and histopathological diagnosis of these neoplastic and non-neoplastic gastric lesions in Bangladeshi patients.* ***Materials and Methods:*** *This cross-sectional observational study was conducted in the Department of Pathology, Ad-din Akij Medical College, Khulna, from November 2021 to October 2022. In this study, fifty-two samples of endoscopic biopsies were collected, processed, and stained with hematoxylin, and eosin. All data were recorded in a pre-designed data sheet. Statistical analyses were carried out by using SPSS version 24 for Windows. A descriptive analysis was performed for all data. Frequencies and percentages indicated observations. The Statistical significance was set at a "p" value<0.05.* ***Result:*** *In this study, the mean age of the patients was 56.96±13.99 with the minimum and maximum ages of the patient were 18 years and 80 years, respectively. A male predominance was observed in the series (65%). Regarding endoscopy, all of the 'growth' found was diagnosed as 'neoplastic' by histopathology, whereas most of the 'ulcer' found in endoscopy was diagnosed as 'non-neoplastic' by histopathology. However, about 2 endoscopically found 'ulcer' cases were diagnosed as 'neoplastic' by histopathological examination. Regarding histological classification, most of the cases about 27 cases were adenocarcinoma, among which 19 cases were intestinal type, whereas 6 cases were diffuse type of adenocarcinoma. Age and endoscopic findings in this investigation were shown to be positively correlated. The correlation between the histological and endoscopic diagnoses of upper GIT lesions was 72.0%.* ***Conclusion:*** *Endoscopic examination and biopsy are practical approaches for a quick and reliable objective evaluation of patients with gastrointestinal complaints. Without a biopsy, endoscopy is not comprehensive, and the best method for determining the cause of lesions found during endoscopy is pathology. A large-scale prospective study with standardized techniques is desirable to validate the present study's findings.*

***Keywords:*** *Endoscopy guided biopsy, histopathology.*

## Introduction

The human digestive system is a long, winding process. Endoscopy and histology work together to help diagnose various stomach lesions. The gastroenterologist and the pathologist must have a close working relationship. The endoscopic findings are highly suggestive but not pathognomic, and they require histological confirmation, it has become apparent over time. A good conversation between a physician, endoscopist, radiologist, and pathologist is necessary for the final diagnosis in the majority of diseases when the histological diagnosis is corroborated (1).

One of the most typical issues in clinical practice is illnesses of the upper gastrointestinal tract, which account for a significant amount of morbidity and mortality. In 1968, the first gastrointestinal flexible fiberoptic endoscope was employed (2).
A lighted, flexible fiber optic or video endoscope is used in upper GI endoscopy to visually examine the upper gastrointestinal tract. Most pathological lesions, which can vary from inflammation to cancer, are found in the upper gastrointestinal tract's oesophagus, stomach, and duodenum. The current gold standard for evaluating individuals with upper GIT symptoms is endoscopically guided biopsy, which is a diagnostic tool. It is essential for the therapy and follow-up of patients as well as for the surveillance of premalignant diseases of the upper GI tract (3).

This study was done at the Department of Pathology in Ad-din Akij Medical College Hospital to determine the relationship between endoscopic findings and histopathological diagnosis.

## Materials and Methods

| | |
|---|---|
| *Type of Study* | A hospital-based cross-sectional descriptive study |
| *Place of study* | Department of Pathology, Ad-din Akij Medical and Hospital, Khulna. |
| *Study period* | November 2021 to October 2022 |
| *Study population* | All patients with endoscopic gastric biopsies in the Department of Pathology, Ad-din Akij Medical College, during the specified time duration comprised the study population. |
| *Sampling technique* | Consecutive sampling. |

### *Inclusion criteria*

1. Patients with upper GIT problems have had endoscopies.
2. Patients who had given consent.

### *Exclusion criteria*

1. Patients who had not given consent.
2. Those who had received chemotherapy or radiation therapy for gastric carcinoma.
3. Inadequate smear.

*Data collection*

It was a cross-sectional descriptive study in which endoscopic biopsy material had taken after getting permission from the Institutional Review Board. Then, after taking properly informed written consent from the patient attending the Department of Pathology, Ad-din Akij Medical College from November 2021 to October 2022, this study was started. For this study, those with upper gastrointestinal issues who had undergone endoscopies were chosen.

*The procedure of the histopathological study*

The study's eligible patients were contacted after receiving the endoscopic biopsy results and offered to participate. Each patient's brief medical history was obtained after they gave their informed consent, paying close attention to their age, anatomical location, and current problems. For each patient, one to two slides were prepared from endoscopic biopsy samples at the Ad-din Akij Medical College Hospital's Department of Pathology according to the standard protocol for processing histopathological slides. Under a light microscope, all prepared slides were inspected, and reporting was completed.

*Data analysis*

After compilation, the data was presented as tables by meticulous checking and rechecking. Statistical data analysis was done using computer-based statistical software, SPSS 24.0 version (SPSS Inc, Chicago, IL, USA). Results were shown as bar diagrams, pie charts for frequency & percentage and histograms to show the correlations. An agreement test was done using SPSS, and the kappa value was used to show the agreement rate between the tests. A 'p-value <0.05 was considered statistically significant because all analyses were considered to have a 95% confidence level.

## Results

Among 52 cases studied, the mean age of the patients was 56.96±13.99, with a minimum of 18 and a maximum of 80 years of age. Male patients (65%, n = 34) were more than the female (35%, n = 18).

In this study, the endoscopic findings were 'growth' in most cases (52%, n = 27) **(Figure 1).** The second common endoscopic finding was 'ulcer' (35%, n = 18). The distribution of the endoscopic findings is shown in **Figure 1**.

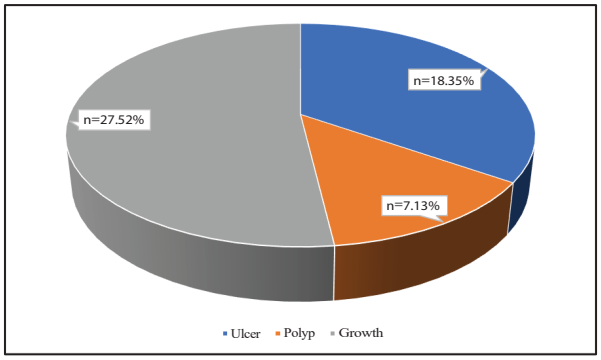


**Figure 1:** Distribution of the endoscopic findings among the patients

The study revealed that all of the 'growth' found in endoscopy was diagnosed as 'neoplastic' by histopathology, which was significant statistically (p = 0.000). In contrast, histopathology diagnosed most of the 'ulcers' found in endoscopy as 'non-neoplastic', which was also significant statistically (p = 0.000) **(Figure 2)**. However, about 11% (n = 2) of endoscopically found 'ulcer' cases were diagnosed as 'neoplastic' by histopathological examination. The overall neoplastic and non-neoplastic cases are plotted in **Figure 2.**

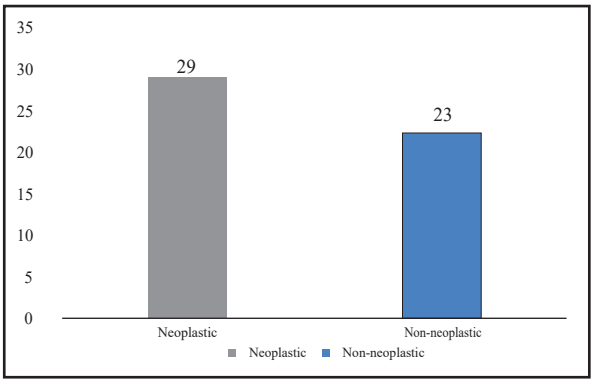


**Figure 2:** . Distribution of neoplasia among the patients (as diagnosed by histopathology)

The detailed histopathological examination showed that most of the cases (52%, n = 27) were adenocarcinoma, among which 37% (n = 19) were intestinal type, whereas 12% (n = 6) were diffuse type of adenocarcinoma **(Figure**

**3).** Meanwhile, about 31% (n = 16) of cases were diagnosed as gastritis by histopathological examination. The distribution of other histopathological diagnoses is shown in **Figure 3.**

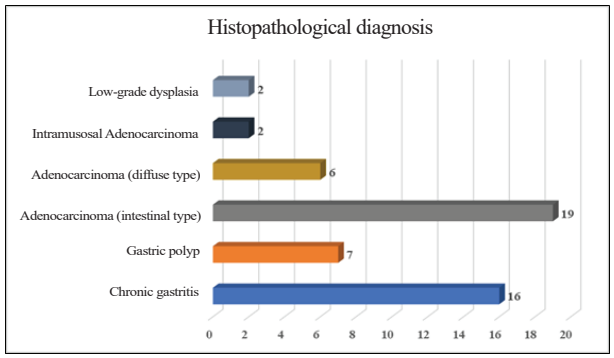


**Fig 3.** Distribution of the histopathological diagnoses

A positive correlation (r = 0.312) was found in this study between age and the endoscopic findings that were significant statistically (p = 0.025) (**Figure 4)**. Moreover, a weak positive correlation (r = 0.045) was also found between age and the histopathological diagnoses that were not statistically significant (p = 0.747) **(Figure 5).**

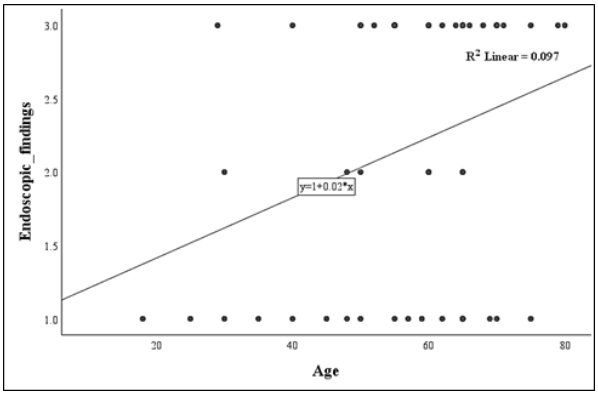


**Fig 4.** Correlation of the endoscopic findings with age

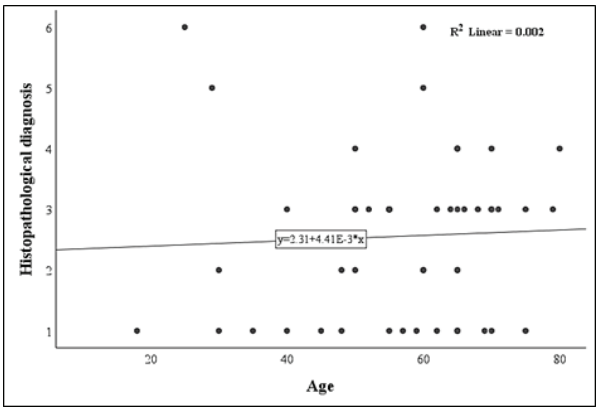


**Fig 5.** Correlation of the histopathological diagnoses with age

This study evidenced a strong positive correlation (r = 0.693) between the endoscopic findings and the histopathological diagnoses having a significant statistical result (p = 0.000) (Figure 6). The agreement test also shows a significant value (kappa = 0.720), indicating that the findings of endoscopy and the diagnoses by histopathology significantly (p = 0.000) agree with each other.

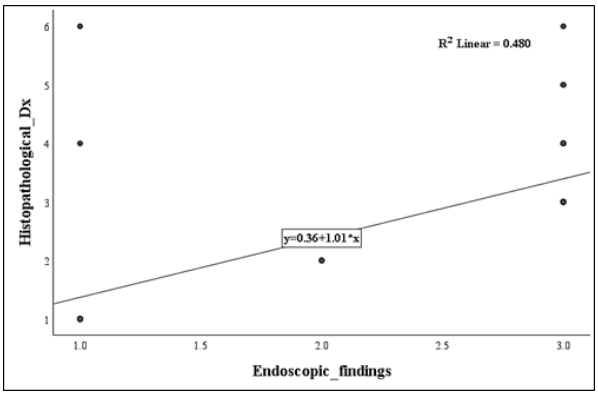


**Fig 6.** Correlation of the endoscopic findings with the histopathological diagnoses

## Discussion

The present study consisted of 52 (100%) gastric biopsies, of which 23 cases were non-neoplastic, and 29 were neoplastic. The mean age of the patients was 56.96±13.99. The age of the patients ranged from 18 to 80 years. The median age was 55.5 years, almost simulating research by Behar et al.(4) and Bogomeltz et al. (5) The age-related discrepancy may result from distinct risk factors in the various age groups.

In our study, male patients were (65%, n = 34) and female (35%, n = 18); male to female ratio was 1.89:1 which is similar to the study of Sheikh BA et al. (2) & Kumar et al.(6)

Growth was the most frequent endoscopic observation in this study (52%, n = 27), which is identical to the study of Sharma S. et al. (3) According to the study, the majority of the "ulcers" discovered during endoscopy were classified as "non-neoplastic" by histopathology, in contrast to all of the "growth" discovered through endoscopy. However, according to histological analysis, about 11% (n = 2) of the endoscopically discovered "ulcer" cases were classified as "neoplastic."

Pailoor K et al.(3) showed that gastritis was identified in 12 patients on endoscopy. Three of these instances had dysplasia. On endoscopy, 8 cases (57.12%) of benign stomach ulcers were determined to be adenocarcinomas histologically.

The detailed histopathological examination showed that most of the cases (52%, n = 27) were adenocarcinoma, among which 37% (n = 19) were intestinal type, whereas 12% (n = 6) were diffuse type of adenocarcinoma. Meanwhile, about 31% (n = 16) of cases were diagnosed as gastritis by histopathological examination.

Our research was comparable to the Sneha Jawalkar et al. (3) study, in which there were 41.66% adenocarcinoma cases and 39.58% chronic gastritis patients.

Rashmi et al. (7) conducted a similar study, finding that out of 68 patients who had stomach pathology biopsies, 41 patients (60%) had non-neoplastic lesions, and 27 patients (39.75%) had neoplastic lesions. The most prevalent malignancy among neoplastic lesions was adenocarcinoma.

Age and endoscopic findings in this investigation were shown to be positively correlated (r = 0.312), additionally, a slight positive correlation (r = 0.045) between age and histological diagnosis was discovered.

The endoscopic results and the histological diagnoses were shown to be strongly positively correlated in this study (r = 0.693), with a statistically significant result (p = 0.000). In the present study, the correlation between the histological and endoscopic diagnoses of upper GIT lesions was 72.0%, which is in accordance with Krishnappa et al.(7)

## Conclusion

Information is usefully obtained from the gastricbiopsy sampled during diagnostic endoscopy. A simple approach for precise objective evaluation of individuals with upper gastrointestinal symptoms is endoscopic examination and biopsies. The prevalence of neoplastic lesions was found to be higher than that of non-neoplastic lesions. These gastric lesions had a 70% concordance between endoscopic and histological diagnosis. The diagnosis of lesions discovered during the endoscopy is best accomplished by histopathology, and endoscopy is not complete without a biopsy. Endoscopic biopsy correlation reflects significant advancements in our understanding of the biology and pathophysiology of the disease. It provides updated diagnostic information, and knowledge of current events, and supports improved patient care.

**Funding:** No funding sources
**Conflict of interest:** None declared
**Ethical approval:** The study was approved by the Institutional Ethics Committee

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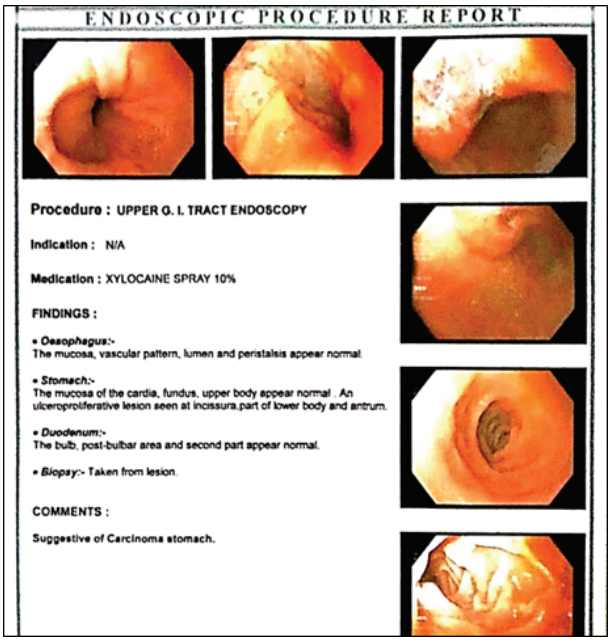
ENDOSCOPIC PROCEDURE REPORT

Procedure : UPPER G. I. TRACT ENDOSCOPY

Indication : N/A

Medication : XYLOCAINE SPRAY 10%

FINDINGS :

• Oesophagus:-
The mucosa, vascular pattern, lumen and peristalsis appear normal.

• Stomach:-
The mucosa of the cardia, fundus, upper body appear normal . An ulceroproliferative lesion seen at incissura,part of lower body and antrum.

• Duodenum:-
The bulb, post-bulbar area and second part appear normal.

• Biopsy:- Taken from lesion.

COMMENTS :

Suggestive of Carcinoma stomach.

**Fig 7.** Sample endoscopic procedure report

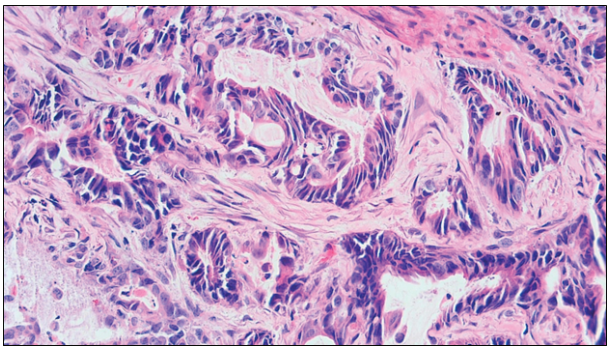

**Fig 8.** Macroscopic appearance of the adenocarcinoma (intestinal type) of the stomach (10X view)

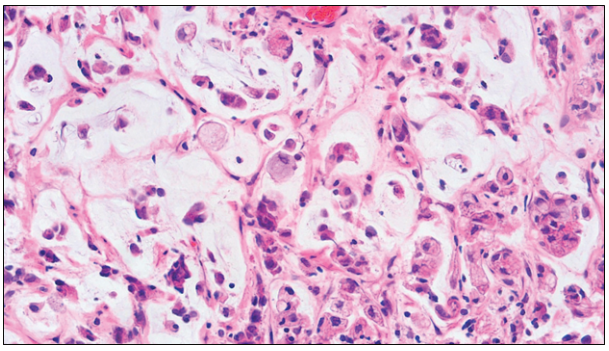

**Fig 8.** Macroscopic appearance of the adenocarcinoma (diffuse type) of the stomach (40X view)

CASE REPORT

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# Cavernous Hemangioma Associated with Tuberculosis of the small intestine: A rare case report

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## *Abstract*

*A cavernous hemangioma of the colon is a very unusual benign vascular tumor. Below is a brief description of the patient's symptoms, diagnosis, and treatment plan for a cavernous hemangioma of the jejunum. A 45-year-old man who had experienced extensive abdominal pain and abdominal distension for 20 years reported a recent worsening of his symptoms. He denied experiencing smaller stools, changing his bowel movements, or losing weight. Laboratory testing led to the discovery of microcytic hypochromic anemia. The colonoscopy's findings supported the presence of a haemangioma. An abdominal computed tomography scan with contrast enhancement showed intestinal dilation, swelling of the mesenteric lymph nodes, intestinal focal and concentric thickening of 15 cm, and vascular dilatation. This discovery is associated with infectious granulomatous disorders such as lymphoma, intestinal TB, carcinoid tumors, and Crohn's disease. The piece of the patient's jejunum that contained the lesions was cut out during the exploratory laparotomy. A histological examination of the removed jejunum revealed a cavernous hemangioma associated with tuberculosis to be the small intestinal tumor responsible for the patient's severe anemia.*

***Keywords:*** *Hemangioma, Jejunum, Cavernous, Tuberculosis*

## Introduction

Embryonic mesodermal tissue, which is quickly expanding, gives rise to benign vascular tumors called hemangiomas. Endothelial cells, which can appear in a variety of forms, manifestations, and sizes, proliferate in them, identifying them. It could occur anywhere in the body (1).

The three types of hemangiomas-capillary, cavernous, and mixed are categorized according to their histological appearance. Cavernous hemangioma is the most common type. Hemangiomas are a factor in just 0.05% of instances of gastrointestinal neoplasms (1).
With the gastrointestinal tract being affected less commonly, they primarily affect the skin, liver, and pancreas (2).

Benign vascular tumors include hemangiomas. The most typical symptom of small intestine hemangiomas is gastrointestinal bleeding. Occult bleeding from the gastrointestinal tract can be brought on by capillary hemangiomas, however, cavernous hemangiomas typically cause sudden hematemesis or melena, and occult bleeding from the gastrointestinal system is less common (3).

An investigation conducted in 2009 found that 7.7% of 1044 patients who experienced gastrointestinal bleeding also had intestinal hemangiomas. The ileum was affected by lesions in five patients, the jejunum by lesions in seven patients, and the jejunum and ileum by lesions in one patient (4).

In the report, we describe a case of a small intestinal cavernous hemangioma that caused occult gastrointestinal bleeding and review the documentation of this condition in the literature.

## Case Report

A 45-year-old male was taken to the emergency room with diffuse stomach pain and abdominal distension. He denied experiencing changes to his bowel habits or the consistency or weight of his stool. The physical examination's findings weren't particularly outstanding. The sole variation found in the lab was microcytic hypochromic anemia. The patient's colonoscopy results were consistent with a haemangioma.
An abdominal computed tomography (CT) scan with contrast showed intestinal dilation, enlargement of the mesenteric lymph nodes, and vascular dilatation in addition to a localized and concentric thickening of the jejunum measuring 15 cm (Figure 1). This observation is consistent with granulomatous infectious disorders such as lymphoma, intestinal TB, carcinoid tumors, and Crohn's disease. The tuberculin skin test resulted in a substantial 25-mm reaction. Due to possible intestinal TB or expansive damage, the patient underwent an exploratory laparotomy with visualization and the removal of 40 cm of intestinal tissue. The anatomical-pathological investigation identified a small intestine cavernous hemangioma (Figure 1) which is characterized by the development of numerous blood vessels into significant cavernous vascular pathways with blood-filled sinus spaces.
The endothelium was composed of a single layer of flattened cells; it lacked atypia or mitotic activity as well as multiple caseating granulomas created by caseous necrosis. These granulomas were surrounded by clusters of epithelioid cells, and a few Langhans-type giant cells, and were separated by fibrofatty stroma (Figs. 2 and 3). The patient had surgery, recovered fully, and showed no signs of illness.

## Discussion

From mesodermal tissue, hemangiomas are hamartomatous lesions that appear from birth(5,6). Abdominal pain and distention are

common gastrointestinal symptoms that might present with a wide range of differential diagnoses. The proper diagnosis is frequently made with the help of further testing. In this report, the first theory was that the symptoms of stomach pain and prior instances of intestinal blockage were indicative of inflammatory bowel illness, more specifically Crohn's disease.

Due to the high frequency of this infectious chronic disease in Bangladesh, intestinal TB is a crucial differential diagnosis. A patient's quality of life may be impacted by Crohn's disease, a chronic condition with a complex etiology that can lead to persistent intestinal damage and functional disability (1).
Common symptoms include weight loss, diarrhea, fever, and stomach pain, albeit the majority of these were absent in our current case. At the time of diagnosis, more than one-third of patients have disease complications such as stenoses, fistulas, or abscesses; around 50% of patients will eventually need surgery (1).

Complementing endoscopic examinations with radiologic tests like MRIs, computerized enterotomography, and transabdominal ultrasounds allows for the investigation of the presence of problems including stenoses and fistulas (5).

Surgery may be recommended in cases that are ambiguous but have complications, as in the current instance. When treating immunocompromised patients, patients who relocate to affected areas, and patients who live in endemic areas like our patients, intestinal tuberculosis is a crucial differential diagnosis to take into account. The most common symptoms include nausea, vomiting, diarrhea, anorexia, bloating, and abdominal pain (7).

Endoscopic features include common lesions such as colonic ulcers, ileocecal valve involvement, and pseudopolyps. The most common differential diagnoses for Crohn's disease include perianal lesions, a parallelepiped pattern, and longitudinal or aphthous ulcers (8).

Expansive lesions like adenocarcinoma and gastrointestinal lymphomas are another differential diagnosis. The second duodenal section of the body is where adenocarcinoma typically develops, and its primary symptoms include bleeding, intestinal obstruction, obstructive jaundice, vomiting, and devouring syndrome (7).

Primary gastrointestinal lymphoma is an uncommon form of cancer that includes lymphomas that start in the digestive system. Abdominal discomfort (59.3%) was shown to be the primary symptom of gastrointestinal lymphoma in a systematic analysis, according to the authors. The primary site of the lymphoma is the ileocecum (37.2%), and the subtype of diffuse large B-cell lymphoma accounts for 53.6% of cases. The most common form of treatment prescribed (60.7%) is surgery and chemotherapy. Having a B-cell lymphoma and having it in the ileocecum were linked to better survival, whereas having an advanced stage and having B symptoms were linked to worse survival (8).

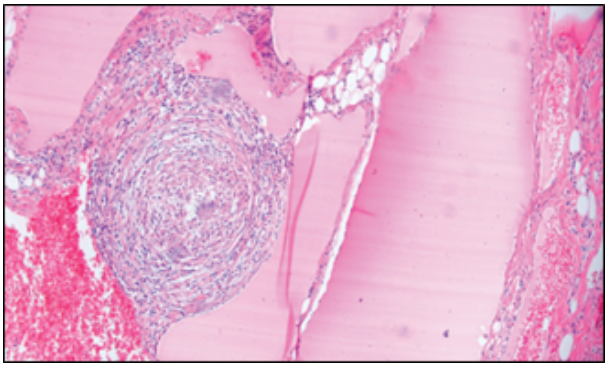

**Figure 1:** Haematoxylin-eosin 40x view

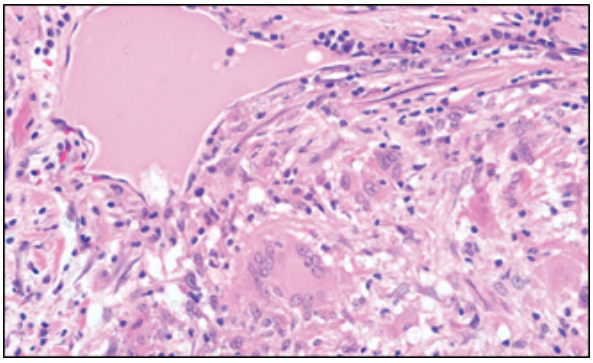

**Figure 2:** Haematoxylin-eosin 40x view (epithelioid cells)

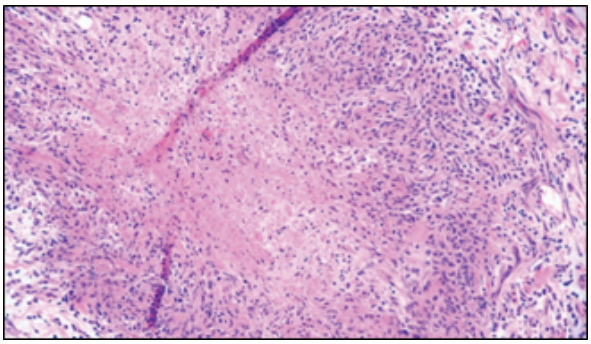

**Figure 2:** Haematoxylin-eosin 40x view (caseous necrosis)

## Conclusion

Patients who experience frequent intestinal bleeding and bowel obstruction should be checked for gastrointestinal hemangiomas, a rare and occasionally misunderstood condition. There are numerous varieties of diagnostic equipment. The gold standard in diagnosis, video colonoscopy, needs X-rays, CT scans, or MRIs as a backup. Surgery is the most effective method. Despite being uncommon, intestinal haemangioma should be considered when developing a differential diagnosis for intestinal illnesses. By using intraoperative surveillance, surgeons can decide on the resection technique.

**Source(s) of Support:** Nil

**Conflict of Interest:** Nil

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