Mesenteric Venous Thrombosis (MVT) – An atypical form of Thrombosis

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Mesenteric venous thrombosis (MVT) is an exceptional form of venous thromboembolism (VTE) that is generally not discussed much and research and references with relevance to the same are very sparse. While there is a gaining impetus and awareness as far as VTE is concerned it is unfortunate to see that MVT is still in its primordial stage and awareness is minimal. It is an uncommon form of thrombosis that is difficult to diagnose [1, 2] and still considered as a potentially fatal form of mesenteric ischemia. MVT has an obscure etiology with prolonged onset of symptoms and controversial methods of diagnosis and treatment [3]. Though MVT is said to be a rare occurrence which is predominantly seen in a geriatric population, it must be noted that of late it is being observed in a much younger population [4, 5], especially women [6,7]. I am presenting here an ordeal of MVT I faced 6 years back and thence, have been collecting all information pertaining to MVT and its treatment. Despite the fact that I have recovered, the health impact that it has left on me is discernible, apparent and of long term.

Pathophysiologically MVT is a clot that obstructs or shuts off the blood flow in the mesenteric veins, through which blood leaves the intestine. This interrupts the blood supply, resulting in severe damage to the intestines. Blocking of the mesenteric vein; also affects all other major veins thereby damaging all the major internal organs that are involved with the mesenteric vein. The injury to the intestines caused by the MVT leads to the typical sign of bloody or black tarry stools. However, the serious complication of MVT is intestinal ischemia, where portions or the
entire intestine becomes gangrenous because of poor or no blood supply. Massive influx of fluid into the bowel wall and lumen causes ischemia, resulting in general increase of volume along with concentration of blood. This leads to bowel edema and decreased outflow of blood which also hinders the inflow of arterial blood, leading to bowel ischemia [8-10]. This is an acute clinical problem, which can be followed by failure of multiple organ systems, resulting in death if not acted upon swiftly [2, 11, 12]. Unlike the problems caused by DVT, MVT is radically diverse; it is intricate and multifaceted because of the involvement of other veins in nearby major organs [personal observation].

Further clotting of the portal or hepatic and splenic veins (which can extend to the renal vein) occurs in most cases of MVT. Even minimal clotting of the mesenteric vein can involve portal and or hepatic veins. Because of its comprehensive level of veins and organs involvement, MVT needs to be detected and treated as early as possible. However early detection is unusual. Attention by a gastroenterologist and a liver specialist apart from being attended by a vascular physician or hematologist seems to be a necessity. When I had my MVT, though the symptoms were vague, I was first attended by a gastroenterologist and subsequently, a vascular physician. My gastroenterologist was quick enough to identify the MVT within three days from the onset of symptoms. It is difficult to determine if MVT builds up over a period of time and then becomes systematic or a rapid occurrence of events is responsible for it [personal observation].

Basic details pertaining to MVT has not changed much in all these years. The mortality rate is still high [12, 13] and clinical expression is termed mostly vague [14-17], and becomes marked only when it is advanced or severe (in some cases like mine even the vague pain was problematic and warranted me to seek medical attention). Other symptoms to follow are abdominal pain [13, 16], which gets worse after eating (for me it started with back pain radiating to the sides), anorexia [13] (I had a normal appetite, having had breakfast and lunch without difficulty), nausea and vomiting [11, 13, 16] (for me dinner was followed by nausea, vomiting and writhing pain throughout the night. I awoke in the morning virtually asymptomatic except for some soreness in
my abdomen. Thereafter I was scared to have my dinner only and after three days of this torment a CT scan revealed I had thrombosis in my mesenteric vein). It is understood that Virchow’s Triad is responsible for thrombosis to occur. Three factors contribute to it, namely, hypercoagulability, hemodynamic changes (stasis or turbulence) and endothelial injury or dysfunction and MVT does not seem to be an exception. After extensive questioning it was finally concluded that the cause of my MVT was blunt force trauma, stress and the use of estrogen

Ordinarily MVT is linked to elderly patients with irritable bowl syndrome, gastric cancer, other forms of digestive organ cancer, pancreatic cancer or splenic diseases [18] and some abdominal surgery [15, 19]. It is also associated with a genetic (blood clotting) defect or as a recurrence to a previous clotting episode no apparent reason for MVT is found in 25-50% of patients. Inherited hypercoagulable [15, 19, 20] causes can also increase the chances of VTE in general, which include the presence of factor V Leiden mutation [21], prothrombin gene mutation, anti-thrombin III [5, 6, 17], lupus coagulant, homocysteine, antiphospholipid antibody [22] and activated Protein C and S resistance [17, 23, 24]. Women taking oral contraceptives [25, 26] who are heavy smokers and or obese are also at an increased risk [7, 19, 27, 28] (An anticoagulation profile checking revealed that I did not have any predisposing genetic reasons; neither a previous clotting episode had occurred nor was a familial link established). Hypercoagulable state can also be acquired due to other reasons like malignancy, surgery, trauma, pregnancy [24, 29-32], immobilization and hormone replacement therapy.

A CT scan is mainly used to diagnose MVT while a Magnetic Resonance Angiography of the abdomen might also be useful. An ultrasound of the abdomen and mesenteric veins can also be used as a secondary diagnostic tool. It is desirable that all MVT cases have an upper GI endoscopy for the likelihood of any esophageal or gastric varices that may have developed [personal observation]. Essential lab studies include prothrombin time (PT), activated partial thromboplastin time (aPTT) and complete blood count (CBC) which may reveal leukocytosis and hemoconcentration. Leukocytosis and acidosis are common laboratory findings in patients with
ischemia. Evaluating MVT patients for inherited hypercoagulable factors is strongly recommended [8]. These should be done as early as possible (even if the patient has unclear symptoms or alongside with the routine CT scan) so the results can be pooled together for ascertaining the possibility of the patient having a MVT, even if the symptoms presented are unclear, because time is valuable in treating MVT and delay in diagnosis leads to increased morbidity and mortality [33 -35].

Statistics reveal that fatality attributed to VTE exceeds the total combined number of deaths from breast cancer, prostate cancer, AIDS and traffic accidents annually [36]. But the awareness VTE receives when compared to any of the above said conditions is far reduced and it is even worse with MVT. The US National Library of Medicine (Pubmed.gov) has the single largest collection of scientific papers published concerning MVT I found only 1370 papers on the same over a span of 64 years (1946 – 2010). It appears that MVT is rare in VTE, which may be one of the reasons why so little research on it is done, resulting in little progress in the area of knowledge, prophylaxis, diagnosis or treatment. But the number of MVT cases has shown an increasing trend over the past 15 - 20 years and it is no longer an occurrence seen in the older population or those with irritable bowel syndrome or certain forms of digestive organ cancer alone. It is now seen among a much younger population too [4] and also poses a great risk for women taking oral contraceptive pills [personal observation].

Considering the suffering that MVT patients undergo, more research needs be done. Research could be of enormous help for patients like me to know what to expect, what treatment options are available and how to manage life with MVT at ease.

Acknowledgements

Due to scarcity of information, the author welcomes any MVT patients or doctors to write to her about their experiences on this.
References:


