PEDIATRIC SURGERY *Update* ©
Vol. 40 No. 01 JANUARY 2013

Von Willebrand's Disease

Von Willebrand's disease (vWD) is the most common inherited bleeding disorder characterized by quantitative or qualitative defects in Von Willebrand factor with a prevalence of 1% in the world population. Von Willebrand factor (vWF) is a large multimeric glycoprotein contained in plasma, platelets and endothelial cells that causes platelet adhesion and aggregation following microvascular injury, and in addition is a carrier for coagulation factor VIII. Patients with vWD manifest dual hemostatic defect characterized by prolonged bleeding time and low plasma level of factor VIII. Deficiency in vWF results in mucocutaneous bleeding, including epistaxis, menorrhagia, and excessive bleeding after trauma or surgery. Classification of vWD is based on the combined results of multiple laboratory tests related to vWF amount and activity as well as the relative amounts of large vWF multimers as determined by gel electrophoresis. vWD is classified as Type 1, seen in 70-80% of all cases, when there is a modest and variable reduction in vWF; Type 2 (20%) if there is qualitative abnormalities in vWF and factor VIII levels; and Type 3 (1-3%) when the patient present near complete absence of vWF. Management of type 1 consists of administration of desmopressin and antifibrinolytics which increases vWF and factor VIII levels. Plasma derived vWF and factor VIII concentrate is utilized to manage type 2 and 3 patients undergoing major surgery and in patients who are unresponsive or desmopressin is contraindicated. VWF:ristocetin cofactor activity may be useful in evaluating the response to vWD treatment in patients who require replacement therapy.

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LAST

With increase availability of ultrasound guidance use of regional anesthesia has increased. Local anesthetic systemic toxicity (LAST) is a complication associated with regional anesthesia difficult to manage and potentially fatal. LAST affect either or both the cardiovascular and central nervous systems depending on the free plasma concentration of the local anesthetic used. This is most commonly the result of intravascular injection causing high blood concentration of the anesthetic. CNS excitation (agitation, auditory change and metallic taste) progresses to seizures or CNS depression (drowsiness, coma, and respiratory arrest). This is followed by CVS excitation (tachycardia, ventricular arrhythmia, and hypertension) then depression (bradycardia, conduction block, asystole, and cardiac depression). Anesthetic cardiotoxicity primarily arises from a blockade of sodium channels. Aspiration prior to injection and use of intravascular marker such as adrenaline can reduce the incidence of accidental intravascular injection. Bupivacaine, levobupivacaine, and ropivacaine are longer acting and more toxic drugs with bupivacaine being the most cardiotoxic. Plasma concentration depends on amount injected and site of injection. Highest plasma concentration occurs with intercostal, epidural and brachial blocks. Combining anesthetic of rapid onset with longer duration anesthetics can be dangerous as individual safe doses with multiple drugs are unknown. Successful resuscitation of LAST, especially with cardiac collapse, consists of lipid emulsion (intralipid rescue). Proposed mechanisms of action include the intralipid acting as a “lipid sink” extracting the lipophilic local anesthetic from plasma and tissues, interference with sodium channel binding and reversal of the anesthetic induced inhibition of myocardial fatty acid oxidation restoring myocardial ATP supply. Adequate monitoring throughout the procedure is essential to detect early signs of toxicity.

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Hypoganglionosis

Hypoganglionosis is a very rare entity of intestinal innervation disorder surrounded by a controversial aura of existence. No genetic basis or mutation has been associated with this condition. Hypoganglionosis is reported in 0.3 to 6% of rectal biopsies and mostly diagnosed in the preschool child. Hypoganglionosis is defined as 40% reduction in the number of nerve cells in the bowel wall. Most common presenting symptoms consist of intestinal obstruction, severe chronic constipation, ileus and enterocolitis. A full-thickness bowel specimen is required for the diagnosis of hypoganglionosis with findings of sparse and small myenteric ganglia, absent or low acetylcholinesterase activity, hypertrophy of muscularis mucosa, mucosa and circular muscle. Interticial cell of Cajal have been reported to be decreased in hypoganglionosis. Hypoganglionosis is managed similarly to Hirschsprung's disease with resection of the affected bowel and some form of subsequent pull-through procedure. Complications associated with management of hypoganglionosis consist of enterocolitis, chronic constipation, overflow encopresis and need of redo pull-through due to residual disease. Mortality is associated with enterocolitis and short bowel complications.

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ISSN 1089-7739