(3) A rapidly increasing leucocytosis constantly occurs: in cases ending in recovery often of 30,000 or 40,000 per c.mm.; in fatal cases usually above 50,000 per c.mm.

(4) Morphological changes in the erythrocytes are slight.

(5) The percentage of neutrophiles is somewhat above the normal, but not so much as in the ordinary inflammatory leucocytosis.

(6) A considerable destruction of the leucocytes takes place, especially in the very severe burns.

(7) Myelocytes may be present in small numbers in severe cases.

(8) There is, as a rule, marked increase in the number of blood plates.

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SEPTICEMIA AND THE CURETTE.

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To attempt to break up an old-established custom in any line of life is at best a thankless job and one likely to call down harsh criticism upon the head of the daring iconoclast. To attempt to uproot old prejudices existing in favor of a certain line of practice in surgery, and diametrically oppose such practice, is to invite from some, adverse criticism of the harshest kind. The only recompense for this is a logical refutation of or concurrence in the argument advanced, on the part of other members of the profession. This latter is what I hope for, and if I provoke a discussion or start a line of thought in the minds of half of the readers of this article, I shall have achieved all I started out to do.

Curetting the uterus to remove fragments of after-birth or other debris has been taught in our medical schools from time immemorial, and it is

firmly fixed in the receptive and retentive mind of every medical student that the first move following any such abnormal uterine condition is to cleanse the uterus by means of the curette. That the organ should be thoroughly and aseptically cleansed admits of no argument, but that the work should be done with the curette, I deny most emphatically.

The majority of cases of death following the decomposition of fetus or placenta in utero are caused by the use of the curette, and I hold that septicemia may be avoided if a more rational procedure be resorted to.

The condition of the uterus containing septic matter is one of great congestion, the thickened walls being coated internally and over the os with a thick, brown, tenacious mucus. The congestion is active, and therefore the more dangerous in the event of the admission of septic matter into the circulation. If the curette is used, denuding the walls of their protective covering, an immediate vaccination takes place with a septic virus, septicemia following in an incredibly short space of time (chemical metamorphosis is marvelously rapid in the circulatory system), and death quickly ensues.

If without using the curette we can remove the septic matter from the uterus without disturbing the mucus covering, and enable the uterus of itself to expel the coating, we shall have taken a long step forward in the treatment of this class of uterine cases. The uterus, by reason of its congestion, may be made to perform a self-cleansing act by exciting the exudation of the serum of the blood into its cavity, thereby washing itself out and expelling all septic matter, instead of absorbing it. This process of exosmosis is induced by a properly combined alkaline solution at a temperature above 100° and a strict avoidance of bichloride, carbolic acid, formaldehyde, or any antiseptic of an acid reaction or astringent nature, which would coagulate the fibrin and albumin of the blood.

My method of procedure is as follows: (1) The gentle removal of whatever fragments are lying in the uterine cavity, by means of forceps, care being taken not to tear from the walls any adherent piece; (2) the gentle flushing of the uterine cavity with the alkaline solution (110°), the reservoir containing the fluid being not more than two feet above the level of the hips.

If the flushing could be continuously administered for a few hours (say two or three), the conditions would be more speedily reduced to normal; but the discomfort of the position of the patient (on a douche pan) prevents this, and a flushing once every two hours with one quart of solution is about the limit of treatment.

For flushing the uterus I use a small dilating uterine douche, and as there is plenty of room for the escape of fluid and fragments, there is no danger of Fallopian colic or salpingitis. The first flushing is frequently followed by contractile pains and expulsion of any previously adherent pieces, together with much of the mucus.

A tablet of extract of *cannabis indica*, $\frac{1}{4}$ gr., and extract of ergotin, $\frac{1}{2}$ gr., given every hour until desired effect is produced, will contract the uterus and alleviate pain.

The bowels should be moved freely, both by enema and catharsis. During the interval between douches the patient should be kept on her back, with the hips sufficiently raised to permit the retention in the vagina of as much of the alkaline solution as it will hold.

The rapidity with which this treatment will reduce temperature, relieve pain, stop vomiting and remove offensive odor is marvelous to one who has not tried it. Sometimes two flushings are sufficient to cleanse the uterus thoroughly, vaginal douches being all that are needed subsequently to complete the work. The uterine congestion is speedily relieved, and the uterine discharge changes from brown, thick, bad-smelling mucus to a thin, transparent one, accompanied or followed by more or less of a flow of blood.

A reduction in the frequency of the flushings is desirable as soon as a tendency to return to normal conditions begins to be observed, as it frequently will within twenty-four hours; then simple vaginal douches every three hours, with an occasional uterine flushing if symptoms indicate it.

The action of exosmosis (and endosmosis, for there is every reason to believe in the absorption of some of the fluid) is what is desired to relieve the existing congestion, as in a bronchitis, pneumonia, congestion of kidney, congestion of any mucous membrane, etc., and is the most rational means of restoring to normal condition.

I do not wish to be understood as decrying the use of that most valuable instrument, the curette, but only the abuse of it, to wit: Its employment under such conditions as make it practically a sharp weapon loaded with septic matter, dangerous beyond the poisoned arrow of the Malay, or the fang of the cobra, and utterly opposed to our modern ideas of antisepsis.

SEVERE EXTRINSIC TRAUMATISMS OF THE SPINE.¹

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SEVERE spinal injuries reduced to an anatomical basis may be divided into two classes: First, those which involve the rachidian structures alone; the osseous, ligamentous, muscular and vascular. (2) Those in which the effects of violence fall with greatest force on the central organ, the cord, its meningeal investments, its ganglia or medullary substance.

The former, or extrinsic, injuries are much the most common, and though not so serious to life or function may by extension of pathological processes involve the deeper or more vital parts; but in most cases they are recovered from, some-

times leaving, however, deformity or impaired function.

The osseous structures of the vertebral column consist essentially of two parts: (1) A segmented whole, made up of the vertebral bodies, with an intervertebral substance, and an enveloping sheath of a tough, fibrous structure. This, properly speaking, is the triple curved backbone, which supports the head and carries the whole trunk. This is a flexible structure which, within various limits, may be bowed or twisted with remarkable impunity. (2) The posterior stage work of the spinal column, the vertebral apophyses which serve chiefly the double purpose of providing a hollow tube for the cord, and attachments for ligaments, muscles and tendons.

All the structures external to the theca spinalis are provided with an abundant circulation, while the cord itself and its membranes are but very sparsely supplied with vessels.

The primary extrinsic lesions of the spine are: (1) Contusions, blows or falls; (2) sprains, hyperflexion, or torsion; (3) hemorrhage—intra and extrarachidian; (4) fractures—simple and open; (5) diastases—fracture luxations; (6) visceral complications.

Contusions, blows or falls on the back seldom involve danger to the spinal structures, except when the volume of force is great and concentrated on a limited area. The spinal defenses provide frequent immunity by sudden sinking of the head, by the projecting shoulders and ribs, the iliac crests, the ponderous lumbar development and gluteal projections. A sudden, violent blow over the neck is the most serious, because of the large sympathetic ganglia here located and its contiguity with the bulb at the base of the brain.

The pneumatic, thoracic areas are well calculated to resist shock, and lower down, afford protection to many of the solid, floating organs of the abdomen.

The spinal cord ends at the last dorsal vertebra, and hence, concussive force on the lumbar or sacral regions can only affect the terminal nerve cords contained therein and the meninges.

The effect of a blow on the lumbar or sacral region, is from direct concussion and *contre-coup* effects—transmitted shock.

Sprain of the spine implies the effects of a complex force, with consecutive pathological conditions, *entorse* and *arrachement*; torsion with overstretching or sundering of ligaments, are invariably essential factors.

The neck, the most mobile segment, suffers most frequently, and grave sprains there are most commonly produced by the body being projected against the occiput, as in diving, or falls on the side of the head. The costal bases which laterally support the thoracic spine, safeguard this segment against torsion injury. The lumbar region frequently suffers from sprains after great efforts in various exercises, or in making heavy lifts with the spine in a laterally inclined attitude.

A severe sprain of a joint is always a serious accident; of the spine more so, because of vital

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