

Surgical Rounds®



FDA Awards 510(k) Clearance for Robotic Knee Replacement Device

Kenny Walter

THE US FOOD AND Drug Administration (FDA) has given 510(k) clearance for a robotic-assisted solution for the use with the Johnson & Johnson Medical Devices Companies ATTUNE Total Knee System.

The clearance allows the VELYS™ Robotic-Assisted Solution to become part of the broader VELYS Digital Surgery Platform of connected technologies.

The VELYS Digital Surgery platform is comprised of connected technologies powered by data insights and designed to elevate the orthopedic experience for patients, surgeons, and their teams across the entire continuum of care.

The robotic system adapts to the individual surgeon's workflow, designed to give them the control they are used to, while helping to execute accurate bony cuts.

By utilizing advanced planning capabilities, proprietary technology, and a next-generation, surgeons using the system can accurately resect bones that align and position the implant relative to the soft-tissue during total knee replacement without needing pre-operative imaging.

The robotic device also simplifies knee replacement surgery by leveraging gap balance data to help surgeons visualize and predict joint stability.

"I've used the VELYS Robotic-Assisted Solution in several of my ATTUNE Knee procedures and have found the VELYS Robotic-Assisted Solution to be accurate, fast and efficient," Mark Clatworthy, MD, orthopedic surgeon at MercyAscot Hospital, who performed the first ATTUNE Knee procedure using the VELYS Robotic-Assisted Solution, said in a statement. "The device enables me to evaluate the bony anatomy and soft tissue envelope of the knee to plan the optimal implant position and then use the robotic-assisted solution to deliver and execute the plan. I've found my knees to be well balanced at the end of the procedure and my patients are doing well post-operatively."

With the population aging, there is an increasing demand for joint replacement surgery. However, data shows up to 20% of knee replacement patients aren't satisfied with the outcome of their surgery. ◀

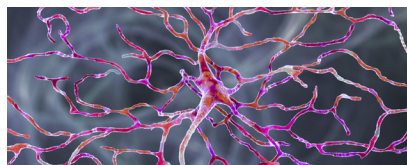


Study Assesses HBV, HCV Prevalence Undergoing Cataract Surgery

Jonathan Alicea

A NEW STUDY CONDUCTED by investigators at the Armed Forces Institute of Ophthalmology and National University of Medical Sciences, Pakistan, evaluated the prevalence of hepatitis B (HBV) and hepatitis C (HCV) among patients undergoing cataract surgery.

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Registry Shows Preferences for Invasive Procedures in Pediatric Retinal Detachments

Kevin Kunzmann

A UNIQUE LOOK INTO an extensive clinical ophthalmology registry has provided investigators new perspective into the trends of treating and outcomes associated with pediatric retinal detachments—particularly

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Reducing Complications of Abdominal Surgery with Sickle Cell Disease

Kenneth Bender, PharmD, MA

IN A REVIEW OF OUTCOMES from abdominal surgery in patients with sickle cell disease (SCD), investigators found the population at risk for postoperative complications that can be mitigated by multidisciplinary interventions.

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Cataract Surgery (continued from the cover)

The study noted a greater prevalence of HCV infection. Furthermore, nuclear sclerotic cataracts had higher prevalence in infected patients—compared with noninfected patients.

“There is limited data suggesting HBV/HCV as risk factor for cataract development,” wrote the investigators. “However, whether cataracts represent an extra-hepatic manifestation of viral hepatitis remains unclear.”

In response to these gaps in understanding, the investigators assessed the link between HBV, HCV and cataract development/presentation.

HBV, HCV Prevalence & Cataracts

The cross-sectional study was conducted between January 2018-Jan 2020 and included 4671 patients visiting a cataract clinic. All patients were >20 years of age.

Prior to patient operation, the investigators evaluated patient history regarding comorbid conditions, such as ischemic heart disease, hypertension, diabetes mellitus, and, most importantly, previous systemic infection and hepatitis, among others.

Those excluded from the study were individuals with uveitis, retinal detachment, previous history of ocular surgery or neurosurgery, and previous treatment with systemic medication causing ocular side effects.

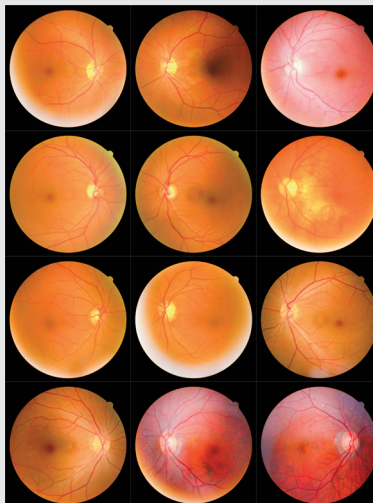
“Patients were then subjected to comprehensive ocular examination for cataract evaluation including visual acuity, anterior and posterior segment examination, intra ocular pressure measurement followed by biometry for intraocular lens (IOL) power calculation,” wrote the investigators.

Thus, among the total population, 181 (3.87%) patients were considered to be positive for HBsAg or anti HCVAb.

Furthermore, 35 (0.74%) were positive for HBsAg—versus 146 (3.1%) for HCVAb.

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Pediatric Retinal Detachments (continued from the cover)



those associated with hereditary vitreoretinopathies.

In a new analysis of the US-based Intelligent Research in Sight (IRIS) Registry from the American Academy of Ophthalmology (AAO), investigators from Minneapolis show observed patterns and benefit of care in children with hereditary-based retinal detachments from 2013–2018. Their findings were presented at the AAO 2020 Virtual Meeting.

Led by Peter J. Belin, MD, of VitreoRetinal Surgery, the investigators sought to determine retinal detachment treatment associations and outcomes through the IRIS registry. Their assessment included patients <18 years old, with a diagnosed rhegmatogenous retinal detachment and a systemic disorder associated with vitreoretinal degeneration or other vitreous malformations.

Relevant systemic disorders included Stickler syndrome and related conditions. Belin and colleagues observed 6 years’ worth of data.

Their assessment included 622 patients, with 740 observed

eyes. Mean patient age was 11.3 years old, while most (59%) were male. The majority (n = 421 [58.4%]) of eyes had at least 1 year of follow-up, where 128 (30%) developed a fellow eye retinal detachment in that time.

Initial surgery was documented in 206 observed patient eyes, with the mean rate of surgeries per eye being 1.98 in 1 year. The common initial surgeries included retinal detachment repair (31%), scleral buckle (28%), and laser surgery (18%). The remaining surgeries were pars plana vitrectomy (17%), cryo (2%) and pneumatic retinopexy (1%).

Another 62 eyes (30%) required additional procedures: 40 following complex retinal detachment repair, 25 following pars plana vitrectomy, and 15 following scleral buckle.

Overall, mean patient visual acuity improved, from 20/62, to 20/54, following procedures. Another 24 patients (12%) underwent either prophylactic laser or cryo in the fellow eye post-care.

Belin and colleagues concluded these findings—which show a clinical preference for retinal detachment surgery and scleral buckle in pediatric patients despite frequent post-surgery procedures—could serve to benefit clinicians navigating a similar, unfamiliar treatment scenario.

“IRIS Registry data provides insight into rare pediatric vitreoretinopathy-associated retinal detachments that have a high rate of reoperation and fellow eye involvement,” they wrote.

The study, “Treatment Patterns and Outcomes of Hereditary Pediatric RD: Analysis from the IRIS® Registry,” was presented at AAO 2020. ◀

Abdominal Surgery with Sickle Cell Disease (continued from the cover)

“Patients with sickle cell anemia have increased postoperative morbidity. The most common causes of morbidity are vaso-occlusive crisis, hemolytic crisis, acute chest syndrome, infections and congestive heart failure,” observe Uğur Topal, MD, Department of General Surgery, Cukurova University, Adana, Turkey, and colleagues.

“A multidisciplinary approach involving the hematologist, surgeon and anesthesiologist is required in the surgical management of sickle cell anemia,” they indicated.

Topal and colleagues conducted a retrospective review of patients with SCD who underwent abdominal surgery at the Cukurova University hospital in the period of June 2011 through June 2018. A total of 15 patients were identified; 67% male, mean age 32.8 ± 13.8 years. Indications for surgery were cholelithiasis (73.3%), spleen infarction (6.7%), hypersplenism (13.3%), and cholelithiasis with hypersplenism (6.7%).

The surgical interventions were laparoscopic cholecystectomy (n = 9), laparoscopic splenectomy (n = 1), cholecystectomy (n=1), cholecystectomy with splenectomy (n = 1), and cholecystectomy with choledochoduodenostomy (n = 1).

Postoperative surgical complications were wound infection (n = 1) and acute renal failure (n=1). Hematological complications were vaso-occlusive crisis (n = 1) and hemolytic crisis (n=1). In reviewing 90-day readmissions, 1 patient presented with ileus and 1 with hematoma at the wound site.

“Major stress factors in the development of complications in patients with SCD are surgical and anesthetic applications, potential hypotension, hypoxia, acidosis, hypoperfusion and hypothermia,” Topal and colleagues indicate.

Among their recommendations, is that patients should receive pneumococcal and H influenza type b conjugate vaccines at least 2 weeks before splenectomy, when splenectomy is under elective conditions.

“The importance of vaccination prior to splenectomy increases with the increase in the duration of hospitalization, due to increased susceptibility to encapsulated bacteria after a splenectomy,” Topal and colleagues noted.

They emphasize the importance of preoperative clinical evaluation of patients with SCD, including ascertaining the sickle cell genotype, frequency of crisis, the last crisis history, duration of hospital stay during the painful crisis, triggering causes, opiate use, as well as complete hematological assessment.

“In patients with SCD, the factors that may cause vaso-occlusive crisis should be closely monitored in the preoperative, intraoperative, and postoperative periods, and perioperative measures should be taken to prevent them,” Topal and colleagues advised.

They note the importance of fluid replacement in patients with SCD, and that preoperative intravenous hydration should be continued until postoperative oral feeding. They also recommend blood transfusion and exchange transfusion if necessary to establish preoperative hemoglobin levels of around 10gm/dL and hemoglobin S below 40%.

In addition to the physiological measures, Topal and colleagues indicate the importance of managing perioperative emotional stress and pain. They assert that emotional stress can trigger a hemolytic crisis, and that anxiolytics should be used when necessary. While opioids are commonly used early in the postoperative period, they note the subsequent utility of non-steroid anti-inflammatory drugs (NSAIDs) and such non-pharmacologic interventions as heat or ice packs and relaxation music.

The review and recommendations, “Management of Abdominal Surgery of Patients with Sickle-Cell Anaemia,” were published online in the Journal of Evolution of Medical and Dental Sciences (JEMDS). ◀



Opioid-Sparing After Surgery May Be Viable Option

Jonathan Alicea

A NEW STUDY REPORTED that patients on an opioid-sparing pathway post-surgery received and used fewer opioids, reported less pain, and indicated similar satisfaction compared with patients who received standard of care.

The study, led by Maia Anderson, MD, Department of Surgery, University of Michigan, used de-identified data to retrospectively compare opioid-naïve patients who participated in an opioid-sparing pathway after surgery with opioid-naïve patients who received standard of care for the same procedures.

“Although opioid-sparing post-operative pathways offer a novel approach to mitigate these risks, concerns about inferior pain control and patient satisfaction have hindered their adoption,” they wrote.

Nevertheless, they acknowledged that the excessive prescribing of opioids after surgery can increase risk of patient morbidity and may further have adverse effects within communities.

Evaluating Opioid-Sparing and Patient Satisfaction

Their analysis included patients who underwent laparoscopic cholecystectomy, hernia repair, or thyroidectomy between August 1, 2018–December 31, 2019.

Those in the opioid-sparing pathway (n = 310) received preoperative counseling to use scheduled acetaminophen and ibuprofen for 1 week after surgery. Following their operation, they then received prescriptions for those medications as well as a small prescription of 4-10 oxycodone 5-mg tablet.

Standard of care was administered at the discretion of the surgeon. Anderson and colleagues gathered a numerically- and qualitatively-matched sample from the Michigan Surgical Quality Collaborative.

Patients in both groups had been contacted 30-90 days post-operation to patient-reported outcome surveys.

Thus, in the opioid-sparing pathway, 36.8% of patients did not receive an

opioid prescription—compared with 0% in the standard of group.

The team also noted no differences in patient satisfaction, regret to undergo surgery, or quality of life between the groups. Even more, these findings were notably consistent across procedures.

“Similar satisfaction despite differing pain scores may be explained by the influence of other unmeasured factors on overall satisfaction,” the team of investigators wrote.

“Importantly, more patients in the opioid-sparing group received no opioid prescription, which avoids the risk of diversion into communities,” they continued.

The team acknowledged that the study was limited by its retrospective design, lack of intraoperative analgesic data, and its exclusion of patients using prescription opioids prior to surgery.

“Expanding this approach may be an effective way to combat opioid-related morbidity without negatively affecting the patient experience.”

The research letter, “Patient-Reported Outcomes After Opioid-Sparing Surgery Compared With Standard of Care,” was published online in *JAMA Surgery*. ◀

Cataract Surgery (continued from page 2)

In terms of sex, HBV prevalence was higher among males (77.17%) compared with females (22.8%). A similar trend was noted for HCV prevalence—with 60.96% of males testing positive, versus 39.04% of females.

The investigators also noted that “23 (65%) of patients with HBV and 80 (54.8%) of patients with HCV had nuclear sclerosis cataract as compared to 51% of non-infectious patient.”

Seropositive patient mean age at time of symptom presentation was

63.3 years, while seronegative patient mean age was 69.2 years.

Conclusion

The investigators indicated these findings affirm the importance of screening for HBV and HCV among such patients so that further transmission can be prevented.

“[The infection prevalence] implies strict screening for hepatitis serology should be carried out pre-operatively in order to avoid exposure of infective agents to the operation theatre staff and surgeon,” they wrote.

They also noted additional vigilance is warranted for patients diagnosed with either HBV and HCV. In particular, they noted the strong association between either infection and age nuclear cataract.

“It implies that HBV or HCV infected patients ought to be examined and vigilantly monitored for cataract development pertaining ocular health,” the team concluded.

The study, “Frequency Of Hepatitis B And C In Patients Undergoing Cataract Surgery in a Tertiary Care Eye Hospital,” was published online in *Pakistan Armed Forces Medical Journal*. ◀