

(n = 1). The risk of a major adverse event correlated with higher AAST Injury Grade, as well as with angiographic findings of active extravasation and/or pseudoaneurysm.

**Conclusions:** IR has an important role to play in the multidisciplinary treatment of splenic trauma. Splenic embolization has been shown to significantly improve splenic salvage rates, although not without the risk of complications. Our reported splenic salvage rate of 98% demonstrates the important role that embolization should play in the management of these patients. Despite the acceptance of this treatment option, questions still remain regarding patient selection, long-term splenic function, and the role of prophylactic vaccination given possible deficiencies in immunologic function after embolization.

#### Abstract No. 428

##### Uterine artery embolization in pig: an in vivo evaluation of the embolization effect of newly developed microspheres

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**Purpose:** To evaluate the embolization effect of newly developed microspheres on pig uterine artery (UA).

**Materials:** Twelve adult non-pregnant pigs, mean weight  $50 \pm 5$  kg, were randomly allocated into three groups (4 pigs per group). Microspheres of 2 sizes, 300-500  $\mu\text{m}$  (group A) and 500-700  $\mu\text{m}$  (group B) were compared with non-calibrated gelatin sponge 350-560  $\mu\text{m}$  (group C). Bilateral UA were superselected and embolized using 2.8F standard microcatheters. Seven days before embolization, each pig received an intramuscular administration of 6000 IU chorionic gonadotrophin for 3 days. Seven days after embolization, follow-up angiography was performed to quantify the degree of UA recanalization using a specific embolization score proposed by Stampfl et al. Pigs were immediately sacrificed thereafter and macroscopic necroses of uteri were visually evaluated using a score system proposed by Pelage et al. Each uterine horn and UA were considered independent for statistical analysis.

**Results:** Technical success rate was 100% without evidence of non-target embolization. No microcatheter occlusion occurred during embolization. There were no statistical differences in the median diameter of the UA and the median particle volume among the 3 groups (Kruskal-Wallis test). All uteri revealed necrosis on macroscopic inspection. The rates of extensive uterine necrosis of group A (75%) and B (87.5%) were significantly higher than that of group C (25%) ( $p = 0.024$ , Pearson Chi-square test). There were no evidences of total recanalization of UA among the 3 groups. Most of the UA of group A (87.5%) remained occluded at the level of the arcuate artery while those of group B and C remained occluded at the level of the radial artery (50%), however, the difference was not statistically significant ( $p = 0.074$ , Pearson Chi square test). Group B and group C had 2 UA main trunks occlusion while group A did not.

**Conclusions:** The newly developed microspheres 300-500  $\mu\text{m}$  and 500-700  $\mu\text{m}$  had devascularization effect on pig UA with extensive uterine necrosis. The occlusion was consistent after 7 days.

#### Abstract No. 429

##### A case control study of percutaneous sclerotherapy versus transcatheter hepatic arterial embolization for treatment of large-volume hepatic hemangioma

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**Purpose:** To evaluate the clinical efficacy of percutaneous sclerotherapy and transcatheter hepatic artery embolization in the treatment of large volume hepatic hemangioma.

**Materials:** Twenty-two patients with large-volume hepatic hemangioma (diameter larger than 5 cm) were randomly divided into two groups between Jan 2015 and Aug 2017 at one single institution. Eleven cases were undergone percutaneous injection of bleomycin sclerotherapy under CT-guidance (sclerotherapy group), 11 patients were performed by DSA-guided bleomycin lipiodol emulsion transcatheter hepatic artery embolization (embolization group). The procedure time, hospital cost, postoperative outcomes, complications and QOL scales were reviewed and analyzed.

**Results:** The mean procedure time ( $15.6 \pm 6.4$ ) min in sclerotherapy group was shorter than that in the embolization group ( $51.5 \pm 7.2$ ) min. The liver dysfunction rate of sclerotherapy group (27.3%, 3/11) was much lower than that in embolization group (90.9%, 10/11). The mean hospitalization and cost of sclerotherapy group were significantly less than that of embolization group,  $p < 0.05$ . At 6 months follow-up post procedure, the effective rate (CR+PR) of sclerotherapy group and embolization group were (81.8%, 9/11), (92.3%, 10/11), respectively,  $p > 0.05$ .

**Conclusions:** Both approaches (sclerotherapy, embolization) in the treatment of large-volume hepatic hemangioma are effective and safe. Sclerotherapy is more simple, cost-effective method in the treatment of hepatic hemangioma.

#### Abstract No. 430

##### Repeat uterine artery embolization: update on indications and technical findings

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**Purpose:** To re-examine the indications and technical aspects of uterine artery embolization (UAE) in patients undergoing repeat UAE procedures.

**Materials:** At a single-center from 2006 to 2012, patients who underwent repeat UAE for recurrent, persistent, or new symptoms were identified. Magnetic resonance (MR) imaging before repeat embolization was compared to initial MR imaging (obtained prior to first embolization). The extent of fibroid infarction after the first procedure, growth of existing fibroids, and new fibroids were assessed. Procedure records were reviewed for technical aspects of first and second UAE procedures.